environment
& PARKS

SPECIAL WASTE LEGISLATION GUIDE

BC

88-03814/

TELEPHONE NUMBERS

WHERE TO REPORT SPILLS(24 HOURS)

Provincial Emergency Program	Zenith 2667 or 387-5956
Canadian Coast Guard (to report marine spills)	666-6011

MINISTRY OF ENVIRONMENT AND PARKS- WASTE MANAGEMENT PROGRAM

Headquarters Environmental Safety Program, Victoria	387-9955

REGIONAL OFFICES

Vancouver Island Region

Main Office:	Nanaimo	758-3951

Kootenay Region

Main Office:	Nelson	354-6355
Sub-office:	Cranbrook	426-1475

Lower Mainland Region

Main Office:	Surrey	584-8822

Northern Region

Main Office:	Prince George	565-6443
Sub-offices:	Smithers	847-7253

Southern Interior Region

Main Office:	Kamloops	374-9717
Sub-offices:	Penticton	493-8261
	Williams Lake	398-4532

MINISTRY OF TRANSPORTATION AND HIGHWAYS:

Dangerous Goods Coordinator (Victoria)	387-5585

TRANSPORT CANADA

Canadian Coast Guard(24 hour marine spill reporting)		666-6011
Transport Canada (TDG-Vancouver)		666-2955
CANUTEC(Ottawa)	Emergencies	(613)996-6666
	Information	(613)992-4624

ENVIRONMENT CANADA

Conservation and Protection (Vancouver)	666-6711

Special Waste Legislation Guide

Waste Management Branch
Ministry of Environment and Parks
The Province of British Columbia

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Waste Management Branch
Ministry of Environment & Parks
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V8V 1X5

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I HOW TO USE THIS GUIDE

This Guide explains how to follow British Columbia's special waste management laws and regulations, and it describes the Province's special waste management programs. There are 22 major sections, starting with a brief introduction, followed by step-by-step descriptions of the legal procedures for the identification, handling, storage, transportation, and disposal of special wastes.

Waste owners and generators will first need to know if their wastes qualify as special wastes, so they usually will start with Section III, When is a Waste a Special Waste? At this stage it will be necessary to have a good chemical and physical characterization of the waste and access to a well equipped laboratory for chemical analyses may be required.

Once it is known that a waste is a special waste, the next step is to register that waste with the government. Section IV discusses the procedures for registering a special waste. The Special Waste Regulation provides a 90-day period for registering storage and production of special waste and, therefore, attention must be given early to the generator registration process.

Since containers are frequently used to store or transport special waste they are an important element in any special waste management option. Section V should be reviewed to determine the requirements for placing special waste in containers. This may save future time and effort in repackaging wastes which may have been placed in the wrong type of containers or in incompatible combinations.

Section VI discusses the issue of transporting special waste. This section is of interest to special waste haulers, consignors and receivers. It discusses the consignor identification number system, the process for obtaining a transport licence and the responsibilities of all parties in completing a manifest.

Soon after a waste is classified as a special waste, a decision must be made on how it should be managed. Various ways of handling special wastes are reviewed in Section VII Special Waste Management Options. It includes a table of possible options for waste reuse, treatment and disposal for different types of special wastes.

How a special waste will be managed will determine which sections of the Guide are consulted next. Sections VIII to XVI discuss the requirements for all types of special waste management facilities. Section VIII is particularly important because this covers those general requirements which must be met by all types of facilities. Other Sections are more specific to the type of management facility being used. For example, if it is decided to manage the waste at a special waste treatment facility, then Section XI on Treatment Facilities should be consulted. On the other hand, if the waste is to be temporarily stored on site, the section on storing special wastes should be reviewed.

Certain prohibited practices in relation to the management of special wastes are discussed in Section XVII. These include prohibition of mixing and dilution of special waste, underground injection of special waste, facilities on water and discharges to municipal sewers and landfills.

Some special wastes such as waste asbestos, waste oil and pesticide wastes may be managed according to specific provisions of the Regulation. Section XVIII discusses how these wastes may be handled and disposed.

Section XIX of this Guide explains how to obtain permits or other forms of authorization for special waste management facilities. Anyone wishing to store, treat or dispose of special waste should consult this section. The various stages of the decision making and appeal process for storage and discharge permits are found in that section.

Section XX is a brief summary of the offences and maximum penalties under British Columbia's special waste management legislation. Other penalties under the federal Transportation of Dangerous Goods Regulations may also apply in transport related incidents. These Regulations should be consulted for these offences and penalties.

Contingency planning (ie. spill prevention) functions of the Waste Management Branch and the Province's requirements in the management of spills are discussed in Sections XXI and XXII respectively.

Several other features may be used to make the Province's special waste system easier to use and understand. First, the inside cover contains an abbreviated list of contacts for various government agencies involved in the management of special wastes. A more complete list of addresses and telephone numbers appears in Appendix A. A

summary of selected information sources is shown in Appendix B and samples of application and permit forms are provided in Appendix C. A glossary in Appendix D may be consulted for definitions of many technical terms.

As scientific knowledge of special wastes expands, it will be necessary to revise the special waste regulations periodically. Therefore, users of the special waste management system should keep abreast of the current status of these regulations by maintaining contact with the Ministry's Waste Management Program. In addition, with changes in special waste regulation, revisions to this Guide may also be made. Users should be sure to check that they have the latest copies of the special waste regulation, this Guide and the Waste Management Act.

The last page of this guide contains a request-for-revisions card so that readers may obtain future revisions to the document.

Finally, this Guide is not a legal document. In all cases the Waste Management Act and regulations take precedence in differences in interpretation between the Guide and legislation governing special wastes in British Columbia. For further explanation of British Columbia's special waste management system, Environmental Safety Program staff at Victoria headquarters or Regional Waste Management Program offices should be consulted.

II INTRODUCTION

What are Special Wastes?

What's so special about special wastes? This is a group of wastes that are potentially hazardous to human health and the environment and which require special care during handling and disposal. Special management techniques are needed to eliminate or reduce the hazards. In short, special wastes are those materials which should not be sent to ordinary landfills or discharged into our sewer systems. More specialized management systems are required to safely deal with these wastes. Section VII of this document discusses a hierarchy of management options which should be followed when decisions are made on how a particular waste should be handled.

Special wastes can be categorized as corrosive, ignitable, infectious, reactive (explosive), toxic, bioaccumulative, mutagenic, carcinogenic or teratogenic and they can range from paints, oils and solvents, to acids, heavy metals, and pesticides. Most of us know them as the by-products of an industrialized society. Figure 1 shows estimates of the annual quantities of special wastes generated in British Columbia.

There are various ways of properly dealing with special wastes and this Guide explains British Columbia's system for managing these troublesome substances, with particular emphasis on our special waste laws and regulations.

In the late 1970's, the lack of facilities for proper treatment and disposal of special wastes in British Columbia became clear through a number of serious situations. The need to clean up abandoned chemicals and contaminated work sites led the government to develop plans for a waste management system which could handle these hazardous materials.

Part of the initial planning included the commissioning in 1979 of the consultants Reid, Crowther and Partners to prepare a comprehensive special waste management strategy for the four western provinces, Northwestern Ontario, the Yukon and Northwest Territories, and the Federal Government of Canada.

Following publication of this strategy, in 1980, the Honourable Stephen Rogers established a Provincial "Hazardous Waste Advisory Committee" to advise him on steps to be taken to develop safe, acceptable methods and facilities for managing special wastes in British Columbia. This committee's recommendations were published in June, 1981 in the "Report of the .i.Hazardous Waste Advisory Committee." This work formed the groundwork for the provincial special waste management program.

Most importantly, the committee recognized that a comprehensive special waste management system, with five major program elements, was necessary for B.C.:

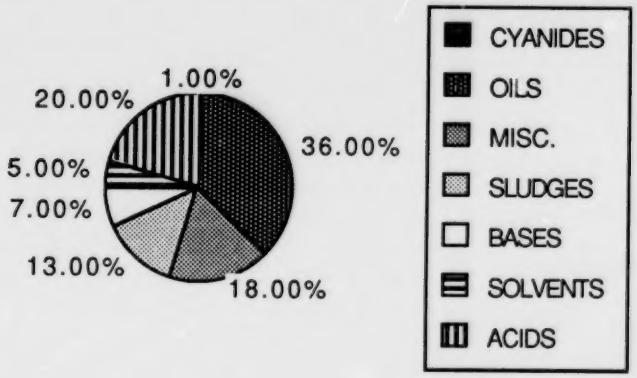
- technologies to recycle, treat, store, transport and dispose of special wastes
- operators for special waste management facilities
- suitable locations for these facilities
- laws and regulations to ensure the system operates properly and safely
- programs to inform the public about the special waste system

Significant progress has been made in the development of all five components. In January, 1987, the Minister appointed the Special Waste Advisory Committee to seek proposals for the development of special waste facilities in B.C. This Committee has conducted an extensive search for suitable facility operators and has made a recommendation to the Minister. At the writing of this Guide, the Committee was assisting the selected proponent with finding a suitable site for the proposed facility.

II. INTRODUCTION

FIGURE 1: SPECIAL WASTES GENERATED ANNUALLY IN B.C. TOTAL 74 139 TONNES

Source: Reid, Crowther and Partners Ltd.
Hazardous Wastes in Northern and Western Canada



Legal Aspects

This document is a guide to the Province of British Columbia's legislation for special waste management. The Waste Management Act, the Special Waste Regulation, the Federal Transportation of Dangerous Goods Act and the Environment Management Act are most relevant to this topic.

A major impact of the Waste Management Act is to establish a comprehensive regulatory framework to manage special wastes through a transportation tracking system, plus a mechanism for controlling special waste storage, treatment, and disposal facilities. This Act, provides a broad outline for the system and is accompanied by a regulation which provides much more detail for the program.

This regulation is formally entitled "Special Waste Regulation" and is published separately from the Act. It covers such subjects as special waste registration, requirements for special waste facilities, containers for storing and transporting special wastes, licensing of special waste carriers, and requirements for specific types of special waste. Because this Guide is not a legal document, the Act and regulation governing special wastes in British Columbia take precedence in the event of differences of interpretation.

III WHEN IS A WASTE A SPECIAL WASTE

What is a special waste? How do I know if I have a special waste and, hence, when am I subject to the special waste regulations? In order to answer these questions it is first necessary to understand that in 1985 British Columbia decided to join the other Provinces and the Federal Government to agree on a national definition of dangerous goods under the Transportation of Dangerous Goods Regulations. Under these regulations most hazardous (special) wastes are also part of the larger group of regulated dangerous goods which includes all dangerous commercial goods and products. (Figure 2)

The definition of special waste in B.C. relies very heavily on the Transportation of Dangerous Goods Regulations. A waste generator would be wise to obtain a copy of these regulations for a full appreciation of the sometimes fine line between regulated and non-regulated substances. Also, the waste generator has the primary responsibility of knowing what is in his waste. This is where access to a well equipped analytical laboratory may be required. The generator will be hard pressed to determine whether he has a special waste without a full characterization of his waste. Much more serious, he may be risking the safety of himself, his employees, the public and the environment if he does not have this knowledge.

A standard sequence of steps is followed to determine if a waste is a special waste. These steps are embodied in the definition of "special waste" in the Special Waste Regulation. Any material which is not a special waste may be stored or transported without further reference to the Special Waste Regulations although the TDG Regulations may still apply if the material is a dangerous good. However, disposal must still be in accordance with a permit or other form of authorization under the Waste Management Act or its regulations if a discharge to the environment is involved.

FIGURE 2: REGULATED DANGEROUS GOODS

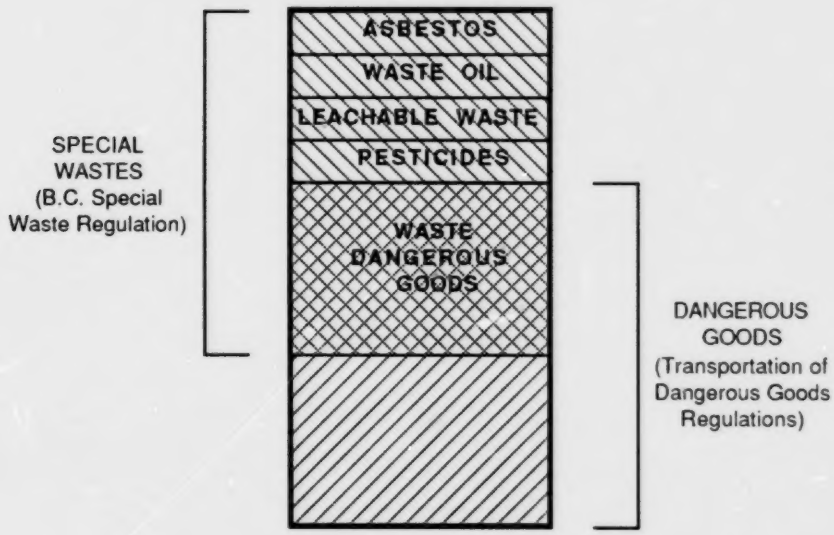
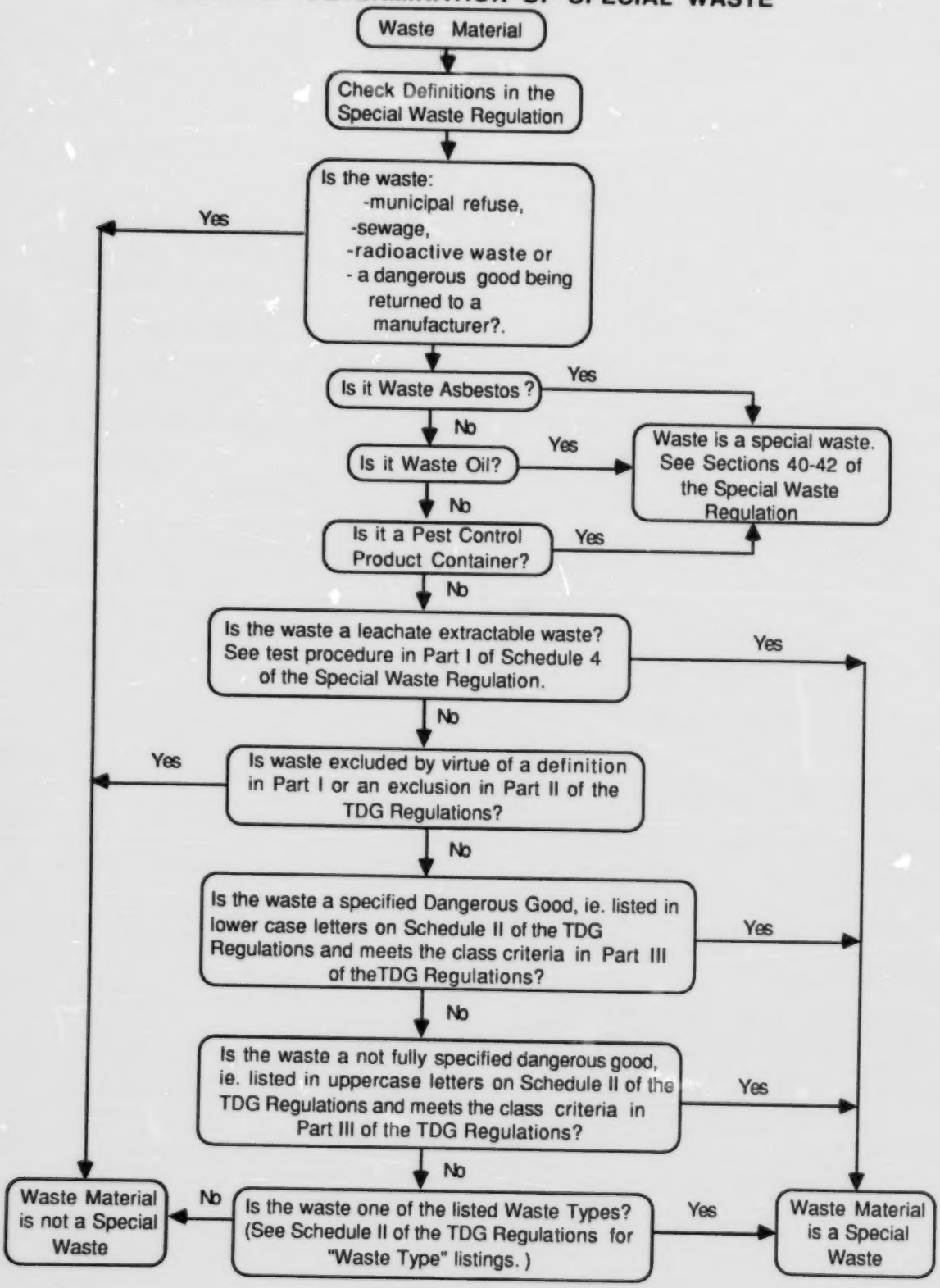


FIGURE 3: DETERMINATION OF SPECIAL WASTE



III WHEN IS A WASTE A SPECIAL WASTE

A. Steps for Determining a Special Waste

The method for determining whether a waste is a special waste is summarized in Figure 3. The individual steps are listed below:

1. Start with the definition of "special waste" in the Special Waste Regulation. If your waste meets the definition of waste asbestos, waste oil, or a waste pest control product (including pesticide containers) you have a special waste. For these special wastes, Sections 40, 41 and 42 respectively of the Regulation should be consulted for specific disposal requirements in addition to the general requirements of the Regulation.

2. If the waste is not waste asbestos, waste oil or a waste pest control product, test the waste with the Leachate Extraction Procedure found in Part 1 Schedule 4 of the Special Waste Regulation. This test measures the soluble portion of contaminants in a waste under an acidic condition. The test is proposed for inclusion in the TDG Regulations.

3. Determine if your waste is a dangerous good as defined and regulated under the Transportation of Dangerous Goods (TDG) Act and Regulations. Obtain a copy of the TDG Regulations and check the following:

   (a) Part I to establish all relevant definitions.

   (b) Part II to see whether there is a specific exemption for your waste.

   (c) Schedule II to determine if your waste contains a fully specified dangerous good. These are the shipping names on the list which appear in lower case letters. Your waste may have more than one commonly used name so you need to check for all possible names. Each waste must be checked against its listed classification criteria. Any waste which meets its listed classification criteria is a special waste.

   At this time it is important to compare the waste against the descriptions of the Waste Types which are found at the beginning of the W's in an alphabetical listing of List II of Schedule II. These are specifically identified industrial process waste streams which usually do not require any further testing to qualify as a special waste.

   (d) Schedule II a second time to see if your waste contains a not fully specified dangerous good. These are the entries in the list which are in upper case letters. Generally, these are generic listings and all possible commonly used names need to be checked as well. The waste should be tested against the criteria for all classes listed opposite each dangerous good in the TDG Regulation.

   Note: A waste which contains an environmentally hazardous substance with a 9.2 classification is a dangerous good if the concentration of that substance is greater than 0.01% (100 ppm).

For further information on the classification of wastes under the TDG Regulations consult the "User's Guide to Hazardous Waste Classification" cited in the Selected Reference Books section of Appendix B Information Sources and References.

B. Classification of Special (Hazardous) Wastes

The B.C. Special Waste Regulation depends on the TDG Regulations to classify most special waste. The classification system is the means by which the hazards associated with a waste are described and codified. The details of the classification system are found in Part III of the TDG Regulations.

There are nine major hazard classes. Most of these major hazard classes are further divided by subgroups or divisions. The major classes and their divisions are described in Table 1. Summary of Hazard Classes and Divisions. Leachable wastes are a new category of wastes and are assigned to Class 9.3.

TABLE 1: SUMMARY OF HAZARD CLASSES AND DIVISIONS

Class	Divisions	Description
1 - Explosives	1.1	A substance or article with a mass explosion hazard.
	1.2	A substance with a fragment projection hazard, but not a mass explosior hazard.
	1.3	A substance with either a minor blast hazard or a minor projection hazard or both, but not a mass explosion hazard.
	1.4	A substance or article which presents no significant hazard. Explosion effects are largely confined to the package. No fragment projections of an appreciable size or range are to be expected.
	1.5	A very insensitive substance, although it has a mass explosion hazard as in 1.1.
2 - Gases	2.1	A flammable gas.
	2.2	A non-flammable, non-toxic, non-corrosive gas.
	2.3	A poisonous gas.
	2.4	A corrosive gas.
3 - Flammable Liquids	3.1	Extremely flammable liquid (flash point of less than -18°C).
	3.2	Very flammable liquid (flash point not less than -18°C, but less than 23°C).
	3.3	Moderately flammable liquid (flash point not less than 23°C but less than 61°C).
4 - Flammable Solids, Spontaneously Combustible and Dangerous When Wet	4.1	A solid which under normal circumstances is readily ignitable and burns persistently; or, which causes or contributes to fire, through friction or from heat retained from manufacturing or processing.
	4.2	A substance liable to spontaneous combustion under normal conditions of transport; or, when in contact with air, liable to spontaneous heating to the point where it ignites.
	4.3	A substance which, on contact with water, emits dangerous quantities of flammable gases or becomes spontaneously combustible on contact with water or water vapour.
5 - Oxidizing Substances & Organic Peroxides	5.1	A substance which contributes to the combustion of other material by yielding oxygen or oxidizing substances, whether or not the substance itself is combustible.
	5.2	An organic compound that contains the bivalent "-0-0-" structure which is a strong oxidizing agent and may be liable to explosive decomposition or is sensitive to heat, shock or friction.
6 - Poisonous & Infectious Substances	6.1	A solid or liquid that is poisonous through inhalation, by skin contact or ingestion.
	6.2	Organisms that are reasonably believed to be infectious to humans or animals and the toxins of such organisms.
7 - Radioactive Materials		Radioactive materials with activity greater than 74 kBq/kg, within the meaning of the Atomic Energy Control Act.
8 - Corrosive Substances		A substance that causes visible necrosis of the skin or that corrodes steel or non-clad aluminum, or that has a pH less than 2 or greater than 12.5.
9 - Miscellaneous Dangerous Goods	9.1	A substance or product which presents sufficient dangers to warrant regulation, but which cannot be assigned to any other class.
	9.2	An environmentally hazardous substance.
	9.3	A dangerous waste which presents sufficient dangers to warrant regulation, but which cannot be assigned to any other class.

TABLE 2: TABLE OF PRECEDENCE OF CLASSIFICATION*

			CLASSIFICATION/PACKING GROUP															
COL I			COL II	COL III	COL IV	COL V	COL VI	COL VII	COL VIII	COL IX	COL X	COL XI	COL XII	COL XIII	COL XIV	COL XV	COL XVI	COL XVII
CLASSIFICATION/ PACKING GROUP			4.2 I or II	4.3 I or II	5.1 I	5.1 II	5.1 III	6.1 I (I)	6.1 I (D)	6.1 I (O)	6.1 II	6.1 III	8 I (L)	8 I (S)	8 II (L)	8 II (S)	8 III (L)	8 III (S)
3	I		4.2	4.3	3	3	3	6.1	3	3	3	3	3	-	3	-	3	-
3	II		4.2	4.3	3	3	3	6.1	3	3	3	3	8	-	3	-	3	-
3	III		4.2	4.3	3	3	3	6.1	6.1	6.1	6.1	3	8	-	8	-	3	-
4.1	I		4.2	4.3	4.1	4.1	4.1	6.1	6.1	4.1	4.1	4.1	-	4.1	-	4.1	-	4.1
4.1	II		4.2	4.3	4.1	4.1	4.1	6.1	6.1	6.1	4.1	4.1	-	4.1	-	4.1	-	4.1
4.1	III		4.2	4.3	4.1	4.1	4.1	6.1	6.1	6.1	6.1	6.1	-	8	-	8	-	4.1
4.2	I		-	4.2	4.2	4.2	4.2	6.1	4.2	4.2	4.2	4.2	4.2	4.2	4.2	4.2	4.2	4.2
4.2	II		-	4.2	4.2	4.2	4.2	6.1	6.1	4.2	4.2	4.2	4.2	8	4.2	4.2	4.2	4.2
4.2	III		-	4.3	5.1	5.1	4.2	6.1	6.1	6.1	6.1	6.1	8	8	8	8	4.2	4.2
4.3	I		4.2	-	5.1	4.3	4.3	6.1	6.1	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3
4.3	II		4.2	-	5.1	4.3	4.3	6.1	6.1	4.3	4.3	4.3	8	8	4.3	4.3	4.3	4.3
4.3	III		4.3	-	5.1	5.1	4.3	6.1	6.1	6.1	6.1	6.1	8	8	8	8	4.3	4.3
5.1	I		4.2	4.3	-	-	-	6.1	6.1	5.1	5.1	5.1	5.1	5.1	5.1	5.1	5.1	5.1
5.1	II		4.2	4.3	-	-	-	6.1	6.1	5.1	5.1	5.1	8	8	5.1	5.1	5.1	5.1
5.1	III		4.2	4.3	-	-	-	6.1	6.1	6.1	6.1	6.1	8	8	8	8	5.1	5.1
6.1	I	(I)						-	-	-	-	-	6.1	6.1	6.1	6.1	6.1	6.1
	I	(D)						-	-	-	-	-	8	6.1	6.1	6.1	6.1	6.1
	I	(O)						-	-	-	-	-	8	6.1	6.1	6.1	6.1	6.1
	II	(I)						-	-	-	-	-	8	6.1	6.1	6.1	6.1	6.1
	II	(D)						-	-	-	-	-	8	6.1	8	6.1	6.1	6.1
	II	(O)						-	-	-	-	-	8	8	8	6.1	6.1	6.1
	III						-	-	-	-	-	8	8	8	8	8	8	8

(I) INHALATION TOXICITY
(D DERMAL TOXICITY
(O) ORAL TOXICITY
(L) LIQUID
(S) SOLID
- AN IMPOSSIBLE COMBINATION

* Utilization of the Table: Where dangerous goods have a classification and packing group set out in Column I, and classification and packing group set out in one of the headings of Columns II to XVII, the classification that takes precedence is the classification that is, at the same time, opposite the classification and packing group in Column I and under the classification and packing group set out in the heading referred to above.

III WHEN IS A WASTE A SPECIAL WASTE

Every special waste has a primary classification which describes the main hazards associated with the waste. Some wastes have more than one hazard and in such cases additional or "subsidiary" classes are listed in the TDG Regulations. Before deciding that a waste is not a special waste the TDG Regulations must be checked for any subsidiary classification which might apply.

Where only one hazardous substance is mixed with non-hazardous substances, the classification is determined on the mixture.

The TDG Regulations have specific rules for classifying dilute concentrations of special waste and mixtures of special waste. The Table of Precedence must also be consulted to determine the primary classification if two or more hazard classes apply to a substance. When two or more special wastes are mixed, the classification procedure uses the "Table of Precedence of Classification" found in Schedule 1 of the TDG Regulation to determine which classification code number applies. This table (reproduced as Table 2 in this Guide), lists the classification code of the more hazardous substance for any pair of hazard classes. When three or more classifications might apply, the Table of Precedence requires that each hazardous component be compared against all other hazardous components until the most hazardous classification is determined.

Where any waste is diluted to such an extent that its primary classification criteria does not apply, the waste is checked against any subsidiary classifications listed in the TDG Regulations. The first listed subsidiary classification to meet the criteria becomes the primary classification.

Additional information on the classification system may be found in the booklet "User's Guide to Hazardous Waste Classification" (see Appendix B for reference). This Guide is distributed through offices of the Waste Management Program and Environment Canada. Office locations are found in Appendix A.

C. Naming a Special Waste

For the purposes of completing the generator registration form and the manifest, and to assist emergency response personnel, all special wastes must be identified by a consistent naming protocol. With the exception of waste oil and leachable waste all special wastes are named according to the TDG Regulations. Waste oil and "leachable wastes" are not named in the TDG Regulation as such because these are newly regulated special wastes. It is anticipated that leachable wastes will be specifically included under TDG Regulations in the near future.

The shipping name rules for wastes are as follows:

1. For <u>Fully Specified Materials</u> (lower case letters in Schedule II of TDG Reg.)

   - "Waste ____" (eg. waste copper arsenite)

2. For <u>Waste Types</u> (see W's in alphabetical listing of Schedule II of TDG Reg.)

   - "Waste Type ____" (eg. Waste Type 7)

3. For <u>Not Fully Specified Materials</u> (Uppercase letters in Schedule II of TDG Reg.)

   Choose the name that best describes the primary and subsidiary classification. If the shipping name has the designation "N.O.S.*" after it, place the chemical names of the substances, that cause the waste to have the primary and subsidiary classes, in parentheses after the "N.O.S.*" shipping name.

   - "Waste ____" [eg. Waste COPPER BASED PESTICIDES, LIQUID, FLAMMABLE, TOXIC, N.O.S.* (copper naphthenate)]

4. For Primary Class 9.2 Wastes

   - "Waste ____" (eg. waste chromic sulphate)

5. For Dilute Wastes Classed as 9.2 (if the listed primary classification does not apply)

   - "Waste contaminated with ____" (eg. waste contaminated with chromic acid, solution)

6. For Waste Mixtures within only one Primary Hazard Class for the Mixture and Constituents

   - "Waste ____ mixture" or "Waste ____ solution" (eg. for a benzene in water waste it is named "waste benzene solution" if class 3.2 applies or "waste contaminated with benzene" if it is sufficiently dilute that only class 9.2 applies)

III WHEN IS A WASTE A SPECIAL WASTE

7. Waste Oil

   - any waste oil meeting the definition of a waste oil is simply named "waste oil". If the waste oil is contaminated with another dangerous good the name should be listed as "waste oil contaminated with ____" (eg. waste oil contaminated with toluene).

8. Leachable Waste

   - any waste which fails the leachate extraction procedure is named "Leachate Toxic Waste _____" where the blank is completed with the numbers of the items in Table 1 of Schedule 4 of the Special Waste Regulation which cause the waste to fail the test. (eg. Leachate Toxic Waste 4, 10; for a waste contaminated with arsenic (4) and chromium (10).

TABLE 3: GENERATOR REGISTRATION QUANTITIES

Waste Classification or Name	Registration Quantity (kg or litres as appropriate)
1	5
2.1	500*
2.2	1000*
2.3	50*
2.4	50*
3.1	100
3.2	500
3.3	1000
4.1	1000
4.2	100
4.3	100
5.1	100
5.2	5
6.1	100
6.2	100
8	100
9.1	500
9.2	5
9.3	1000
waste asbestos	1000
waste oil	5000
waste pesticides	100
waste pesticide containers	500*
leachate toxic waste	1000

*total liquid volume capacity of container(s)

IV GENERATOR REGISTRATION

The Waste Management Act and the Special Waste Regulationrequire that any person in British Columbia who is storing or producing more than a prescribed quantity of special waste must register with a Regional Waste Manager or the Director of Waste Management. This requirement provides an important link in the cradle-to-grave management of special waste and allows waste managers to make policy and operational decisions based on facts rather than speculation.

A. When Is Registration Required? (S. 43)

Existing special waste which is being produced or is in storage must be registered within 90 days of the effective date of the Regulation. Thereafter, newly produced special waste must be registered within 30 days of the date the waste was produced or was put into storage.

Special wastes which are produced and immediately treated or disposed without being put into storage must also be registered. In this case, the owner of the waste determines the amount of waste generated over a 30 day generation period and registers that quantity within 30 days of the 30 day generation period. This situation usually arises where small quantities of special waste are produced and either shipped off site or are immediately disposed on site. To illustrate this situation, consider an example where a forest company produces a small amount of contaminated sawdust from a spray booth operation. The waste is collected daily and burned in a high temperature boiler. To determine if they need to register this waste, the company would measure or estimate the amount of contaminated sawdust produced in a 30 day period. If the amount is greater than the prescribed amount for that class or type of special waste the company has 30 days from the 30 day generation period to register the waste.

Any special waste which is recycled on site without any intermediate storage does not need to be registered. Such wastes do not have a significant impact on the cradle-to-grave management system and, therefore, information on them is not necessary for policy or operational decision-making. This exemption has the added benefit of encouraging on site recycling wherever possible.

Generators outside British Columbia who transport special waste into the Province need not register their wastes. However, generators who ship waste to British Columbia on a regular basis are encouraged to register voluntarily in British Columbia so that these types and quantities of waste would also be included in the registration process. In making such a voluntary registration an out of province generator should indicate his own generator registration number if one is issued by his own jurisdiction. This number should be used in all correspondence with the Waste Management Program.

B. Registration Quantities

Whether a person needs to register depends on the amount and type of a special waste he has in his possession or the amount he generates in any 30 day period. Table 3 shows the maximum amount of each class or type of special waste which a generator may have or produce without having it registered. These quantities are set on the basis of the relative hazard of each waste classification. Registration is required on the lowest quantity for any classification whether it is a primary or subsidiary classification. To learn more about the classification process refer to Section III of this Guide and Part III of the TDG Regulations.

1. What if I have a single waste which has more than one classification?

If a waste is listed in Schedule II of the TDG Regulations with more than one classification the classification which results in the most restrictive registration quantity will apply for the purposes of generator registration. For example, ethylene dichloride is listed in the TDG Regulations with three classification numbers; a primary classification of 3.2 and two subsidiary classifications of 6.1 and 9.2 which corresponds to registration quantities of 500, 100 and 5 litres, respectively. In this case, quantities exceeding 5 litres would need to be registered regardless of the primary classification for the waste.

2. What if I have a waste made up of a mixture of different substances each with a different classification?

Similar to the previous example, whenever a waste is made up of two or more hazardous substances the registration quantity depends on the listed classification which results in the most restrictive registration quantity. For example,

suppose a waste is made up of an alcohol (class 3.2 packing group II) and ethanolamine (class 8 packing group III) which have registration quantities of 500 and 100 litres, respectively. In this case, the registration quantity of 100 litres would apply.

C. Completing the Form

To register a special waste, a generator must first obtain a copy of the form shown in Figure 4 from any office of the Waste Management Program. (Addresses and telephone numbers of these offices are given in Appendix A.)

One form may be used where there is only one generation site and one management site. Otherwise separate forms for each different site are required. Larger companies should take steps to ensure that all special wastes are registered but that duplication of registrations is prevented.

The following instructions correspond to the same lettered sections in Figure 4.

A

Initial Report
Place an X in the box in 1(a) if this is your first generator registration report.

B

Supplementary Report
Place an X in the box in 1(b) if you are reporting a change to a previously completed generator registration form.

C

Consignor Identification No.
If you have previously registered your waste enter your Consignor Identification Number in the spaces provided. If you are an out of province generator who makes regular shipments to B.C. indicate your own identification number if one has been issued by your own jurisdiction. You may strike out the "BCG" prefix and enter your number in the space provided after the box.

D

Generator Name
The name of the special waste generator must be provided. Companies must provide their B.C. registered company name.

E

Generator Address
The generator address must be entered. Companies must provide their B.C. registered company address. Be sure to use the correct postal code.

F

Physical State of Waste
For each individual special waste the physical state must be indicated by the appropriate letter designation. In general terms, a liquid is a waste which has a minimal or negligible amount of solid material; a solid is a waste which has no free liquid and a sludge is a waste which has solids mixed with free liquid.

G

Waste Name
The waste name is entered as it is identified by the Special Waste Regulation and the TDG Regulations. Wherever practical, the most specific name is to be entered on the form.

H

PIN
PIN is the abbreviation for product identification number. This is a number found in Column II of Schedule II of the TDG Regulation which identifies each item listed. This number must be entered in this column exactly, as listed in the TDG Regulations.

I

TDG Class
The TDG Class is the number found in Column III of Schedule II of the TDG Regulations. This is a number which identifies the hazard class of each waste. The criteria in Part III of the TDG Regulations are used to assign a class number to each special waste.

FIGURE 4: GENERATOR REGISTRATION

SCHEDULE 5
Form 1 (S. 43 and 44)

Generator Registration

Instructions: PLEASE PRINT (1) Complete a separate form if the generation site or the management site is different for each waste. (2) Retain Copy 3 (3) Send Copies 1 and 2 to: Director, Waste Management Branch, 810 Blanshard Street, Victoria, B.C., V8V 1X5.

1. This report is:

(a) ☐ an initial generator registration report made under section 43(1) or (2) of the Special Waste Regulation or [A]

(b) ☐ a supplementary report made under section 43(3) of the Special Waste Regulation and the Consignor Identification number (if any) is: BCG- [| | | | |] [B] [C]

2. Generation Identification:
(Note: If the generator is a company operating in British Columbia the registered company name and address must be provided.)

Name of Generator [D]

Address [E]

City _____ Province _____ Postal Code | | | - | | |

3. Special Waste Description

Physical State l = liquid s = solid g = gas x = sludge	Waste Name	PIN	TDG Class	Quantity: Now in storage	Quantity: Produced/ 30-day period	Units L or kg	Handling Code*	Waste Type Code**
a) [F]	[G]	[H]	[I]	[J]	[K]	[L]	[M]	[N]
b)								
c)								
d)								
e)								

*Handling codes

01	storage	04	physical treatment	07	recycled
02	thermal treatment	05	biological treatment	08	other, please specify _____
03	chemical treatment	06	landfill	09	landfarming

**Waste Type Codes - A = generated one time only; B = generated intermittently; C = generated continuously

4. Special Waste Management Practice:

Source or type of process generating the Special Waste(s) [O]

Address of S.W. Generation Site [P]

Address City Province Postal Code | | | - | | |

Location coordinates of S.W. Generation Site Lat.: deg. min. sec. [Q] Long.: deg. min. sec.

Address of S.W. Management Site [R]

Address City Province Postal Code | | | - | | |

5. Contact Person: [S]

Name: _____ Telephone No.: ( ) | | | | - | | | |

PLEASE PRINT

Date: | | | | | | M D Y

Signature: _____

6. Certification: [T]

I, _____ of _____
(Print Name) (Address)

_____, certify that the information provided on this form by the special waste generator is correct.
(City) (Province)

(Signature) _____

For office use only:

Region: LM ☐ VI ☐ TN ☐ CA ☐ OP ☐ OK ☐ SK ☐ KO ☐

Standard Industrial Classification Code: | | | | (1) | | | | (2) | | | | (3)

IV GENERATOR REGISTRATION

J

Quantity in Storage
If you have a special waste now in storage the metric numerical quantity must be entered under this column.

K

Quantity Produced in 30 Days
If you also produce a special waste over time, the metric numerical quantity generated in a thirty day period must be reported in this column. This applies even if the waste production is intermittent. The 30-day period begins either on the date the Regulation takes effect or on the day the waste is first produced.

L

Units
The appropriate metric units either litres or kilograms corresponding to the waste quantity should be entered.

M

Handling Code
The handling code is a number corresponding to the system used to manage the special waste. The code number should be entered for the system(s) now being used, not what might be done with the waste at some time in the future. If more than one handling code is applicable the code for each operation applied to the waste should be entered. For instance, if a waste is first stored on site, then treated chemically and finally landfilled, the codes 01, 03, 06 should be entered on the form.

If you have a handling code which does not match those listed on the form enter "08" in the Handling Code column and specify the type of management system in the blank provided.

N

Waste Type Code
The waste type code indicates the way the waste is generated in relation to a time frame. Mark the appropriate box for each waste according to the following:

A - waste is generated one time only
B - waste is generated intermittently
C - waste is generated continuously.

O

Source of Waste
The source or type of process generating the special waste must be entered as specifically as possible for all of the wastes listed in the Special Waste Description section above. If the wastes are from more than one operation they should be listed in a series. For example, if a pulp mill company generates a solvent waste from their machine shop, a biocide/pesticide from their paper mill and an acid waste in their steam plant, then all three sources should be listed. The line would then read "machine shop(a), paper mill(b) and steam plant(c)" with the letters in brackets corresponding to the waste listed in section 3.

P

Generation Site
The address of the generation site should be entered as clearly as possible. A separate registration form is required for each different generation site. For remote or rural locations, it is appropriate to give the location by the distance and road name such as "5 km east of Anytown, B.C. on Hwy. 99."

Q

Latitude and Longitude
The location coordinates of the generation site must be entered. These coordinates are the latitude and longitude to the nearest second.

R

Management Site
The address of the management site is the first place where the special waste is stored, treated, disposed or otherwise managed. A separate registration form is required for each special waste handled at a different management site. For example, if the waste is stored in one location, treated at a second location and incinerated at a third location, the management site to be listed should be the storage site.

S

Contact Person
A contact person must be given for each registration. This person must be knowledgeable of all aspects of the special waste from the point of generation to the point of final management. This person can expect to be contacted by telephone by the Ministry if further information is required about the waste and the way it is handled.

IV GENERATOR REGISTRATION

T

Certification

The generator or his agent is required to certify that the information provided on the registration is correct. The certifying person may be an employee of the special waste generator and can also be the contact person.

After completing the Generator Registration form it should be mailed to:

Director
Waste Management Branch
Ministry of Environment and Parks
Parliament Buildings
Victoria, B.C.
V8V 1X5

D. After Registration

After the completed Generator Registration form has been sent to the Director of the Waste Management Branch the special waste generator can expect a letter acknowledging receipt. By completing the registration process the special waste generator also meets the requirements of Section 4(2) of the Act. This section requires the person in charge of the special waste to notify a manager of any storage of special waste within 90 days of the waste becoming a special waste.

The data received on the registration form will be entered into a computerized database. Technical staff from the Waste Management Branch will review the registration forms and the waste generator will be contacted if necessary to clarify information . The special waste generator can expect to be asked to apply for a storage permit, or to otherwise manage the waste in a manner according to the Act and the regulation.

At this time the generator will be issued a consignor identification number (unless he already has been assigned a number from the Waste Management Branch or from an out of province jurisdiction. This number is unique to each special waste generator and must be used on all manifests and other correspondence related to transportation and management of special waste. This serves as a primary check against errors in consignor identification in the data management system.

E. Changes to Generator Registration Information

A special waste generator must complete and submit to the Director of Waste Management a new Generator Registration form whenever there is any substantial change in any of the information submitted on a previous Registration form.

A revised Generator Registration form should be submitted for any of the following reasons:

- change of generator name
- change of address
- change of special waste quantity or description
- change of handling method
- change of contact person.

A revised registration may result in a reassessment of the generator's special waste management system particularly if it involves a change in quantity, waste classification or handling practice. A manager or the director may then take steps to improve a particular management facility if it is considered necessary.

F. Access to Information

All information submitted by a special waste generator becomes the property of the Waste Management Branch. Normally, nonconfidential information such as statistics and summary data is made available upon request. However, any information which may compromise a generator's position cannot be released unless approved by the Ministry Executive.

V CONTAINERS FOR SPECIAL WASTE

Containers are used in the storage and transportation of special waste. The Transportation of Dangerous Goods Act defines a container as "an article of transport equipment ... that is strong enough to be suitable for repeated use and is designed to facilitate the transportation of goods by one or more means of transport without intermediate reloading..."

Section 50 of the Special Waste Regulation specifies general requirements for containers. The Regulation requires the use of sound containers which will not release special waste to the environment under normal conditions of storage or transport. Special waste containers also must be compatible with their contents so that unfavourable emissions are not given off or reactions do not take place which might reduce the effectiveness of the packaging. The intent is to ensure that there is no leakage of special waste during storage or transportation. Although the TDG Regulations currently do not have many requirements for containers it should be clear that the requirements of those regulations also apply.

The placement of a special waste in a container is prohibited if it is incompatible with another waste, the container itself, a packing material, or any other substance in the container. Similarly, the placement of special waste in an unwashed container which previously held an incompatible material is prohibited. The Regulation requires that containers of special waste must be kept closed at "all material times during storage or transport" which means that they should only be opened when necessary to fill or to empty the container.

In addition to these regulations certain general safety precautions are recommended when dealing with special wastes in containers. Special waste containers may be re-used for other special waste shipments or disposed of at a permitted disposal facility such as a municipal landfill provided they no longer contain enough waste to qualify as a special waste or they have been properly decontaminated by pressure or triple rinsing with a suitable solvent. Proper protective clothing should always be worn when handling special wastes. Pouring material from one container to another increases the chance of spills and exposure to hazardous chemicals. It should not be attempted unless it is absolutely necessary such as when a container is leaking and it cannot be properly repacked in a salvage drum.

Good hygiene procedures should be observed to avoid ingestion, absorption, and contact with special wastes. Individuals should refrain from smoking, eating or drinking when handling special wastes and should carry out routine personal washing and cleanup afterwards. Most important of all, the Regulation prohibits the use of a container which has residues of special waste for storing food feed or any product which can become part of the human food chain.

Labpacks are a special kind of container used to hold any number of smaller containers. The Regulation is quite specific about how the smaller containers are to be packed within the lab pack. The lab pack must be an open topped metal container with a tight fitting gasketed lid. It must be lined with a 4 mil plastic bag.

Any small container placed inside a lab pack must be wrapped in a 4 mil clear plastic bag and must have a label with the correct shipping name to identify the contents. Inert absorbent packing material such as vermiculite must be used to fill the void spaces in the lab pack to act as a cushioning agent and to soak up any leakage of liquids. An itemized list of all of the small containers in the lab pack and their sizes must be retained for inspection while the lab pack is in storage. This list of the contents of each lab pack must be attached to the manifest during transport and sent to the Ministry by the Consignee/Receiver with the appropriate copy of the manifest.

VI TRANSPORTING SPECIAL WASTE

Section 5 of the Waste Management Act describes legal responsibilities for generator/consignors, carriers and receiver/consignees involved in the transportation of special wastes. These responsibilities include proper use of the special waste manifest system, requirements for containers used to transport special wastes, licenses for owners of vehicles used to carry special wastes, and consignor identification numbers for shipment of special wastes.

The following sections bring together the requirements of the Special Waste Regulation for the safe transportation of special waste.

A. Consignor Identification Number (S. 44)

Section 44 of the Regulation requires any person who has been issued a Consignor Identification number to write this number on every manifest used to ship special waste. The space provided for this number is labelled "Provincial ID No." in Part A on the manifest.

A Consignor Identification Number is issued as part of the Generator Registration process. Therefore, everyone who has enough special waste to require registration will also have enough waste to require a Consignor Identification number.

The Consignor Identification Number is issued to the person or company responsible for the special waste. Normally only one Consignor Identification number will be issued to each generator. In cases where a company has a number of decentralized operations, consignor identification numbers will be issued to the office which will be responsible for the shipments. If the headquarters office takes responsibility for all shipments only one number will be issued. If the local offices take the responsibility for their own shipments separate numbers will be issued to each local office .

B. Transport Licences (S. 45)

In order to ensure additional levels of safety in the transport of special waste the Ministry requires transporters to be licensed. With few exceptions, every person who transports enough special waste to require a manifest is required to hold a licence issued by the Director of the Waste Management Branch. This licence is issued to the person or party responsible for the transportation function. In most circumstances it would be issued to the company hired to transport the special waste rather than the employee drivers.

To obtain a Licence to Transport Special Waste:

- complete the necessary application form which may be obtained from any Waste Management Program office. (See Appendix A for office locations.) A copy of the licence application is shown in Appendix C.
- send two copies of the completed application form to the Director, Waste Management Branch in Victoria.
- provide additional information as required by the Director.

When making a decision for a licence application, the director may require more information to be supplied. In making a decision, the director may place conditions on the licence to limit certain aspects of his operation.

A copy of the licence must be carried in each vehicle used to transport special wastes.

A transport licence is not required if special waste is transported solely on property owned, controlled or leased by the waste generator. Similarly a licence is not required if special waste is carried by the waste generator in a quantity less than the amount for which generator registration is required. These quantity limits are found in Column II of Schedule 6 of the Regulation.

The director may cancel or suspend a Licence to Transport Special Waste of anyone who contravenes the Waste Management Act or regulations. Before a transport licence is suspended or cancelled the licence holder may ask to make representations to the Director, Waste Management Branch or the director may have a hearing on the matter.

C. Prenotification (TDG Regulations)

Under Section 7.14 of the Transportation of Dangerous Goods Regulations. The consignor of any international special waste shipment is required

to notify the receiving jurisdiction of all relevant details about the shipment at least 60 days before the shipment takes place. For shipments into Canada, this notification is done by completing the "Prenotification" form shown in Appendix C and by mailing the appropriate copies of the completed form to the designated office as instructed on the reverse side of the form.

Prenotification is also required at least 30 days before any shipments of PCBs are made between provinces in Canada. Instructions on the reverse side of the form are given for the completion and distribution of the form. The same form is used for both international shipments into Canada and inter-provincial PCB shipments. At the present time, the United States Environmental Protection Agency does not have a specified prenotification form for waste shipments into that country. However, they are currently accepting prenotifications completed on the Canadian prenotification form.

Copies of the prenotification form may be obtained from any office of the Waste Management Program or from the offices of the Transport of Dangerous Goods Directorate of Transport Canada or Environment Canada (see Appendix A for locations).

D. The Manifest System

The manifest is a key part of a computerized record keeping system used to check that all wastes leaving a consignor's property are safely received at the intended destination. This is often referred to as "a cradle-to-grave" tracking system.

Section 5 of the Waste Management Act places the onus equally on the consignor, carrier and the receiver to use the manifest system.

All of the information necessary to track a special waste shipment is recorded on a six copy, colour coded form. A copy of the manifest is shown in Appendix C.

The Special Waste Regulation requires the use of the manifest prescribed by the TDG Regulations. The instructions for completing and distributing copies of the manifest are those prescribed by the TDG Regulations. Blank manifest forms may be obtained from Regional Waste Management Program offices shown in Appendix A.

1. When to Use the Manifest

A manifest is not required for special waste shipments which are transported solely within the boundaries of property owned, leased or controlled by the person who produces or stores the special waste. In all other cases a manifest is required if the shipment involves special waste consignments in excess of 5 litres or 5 kilograms for each special waste. These limits are in accordance with the quantities requiring a manifest under the TDG Regulations.

2. Responsibilities

The responsibility for completing and filing the manifest form is divided between the consignor, the carrier and the receiver. The Waste Management Act prohibits a carrier or receiver from accepting a special waste shipment unless it is accompanied by a valid manifest document.

a) Consignor (Generator)

A person who owns or is responsible for a special waste and who wishes to transport more than 5 litres or 5 kilograms of that waste must:

- use his Consignor Identification Number, if one has been issued to him.
- complete Part A of the manifest as instructed.
- ensure that the person transporting the special waste has a British Columbia Licence to Transport Special Waste.
- ensure that the place to which the waste is transported is appropriately authorized by a storage or disposal permit or other form of authorization.
- ensure that the carrier completes Part B of the manifest and immediately returns copies 1 and 2.
- forward copy 1 of the manifest to the Waste Management Branch in Victoria within 2 working days of the day the special waste was given to the carrier.
- retain copy 2 of the manifest as a recordfor two years.

- make available for inspection any manifests retained within the 2 year period.

b) Carrier

Any person or party who is responsible for transporting special waste must:

- have a Licence to Transport Special Waste in British Columbia.
- complete Part B of the manifest.
- return copies 1 and 2 of the manifest to the consignor/generator after completing Part B of the manifest.
- carry the remaining manifest forms with the special waste shipment and given them to the consignee/receiver with the special waste shipment.
- keep copy 4 of the manifest as a record for two years, after the shipment has been completed.
- make available for inspection any manifests returned within the 2 year period.

c) Receiver/Consignee

A person or party who receives special waste must:

- be authorized to receive special wastes by a permit, order, approval, regulation or waste management plan.
- complete Part C of the manifest received with the special waste shipment.
- forward copy 3 of the completed manifest to the Waste Management Branch, Victoria within 2 working days of the day the shipment was received.
- return copy 4 of the completed manifest to the Carrier.
- forward copy 6 to the consignor/generator.
- keep copy 5 as a record for two years.
- make available for inspection any manifests retained within the 2 year period.

3. Completing the Manifest Form

The manifest is a six sheet carbon copy (or NCR) form intended to contain all details relevant to a shipment of special waste. The form should be completed either by hand with a ball-point pen or a typewriter set to a hard keystroke so that a good impression is made through to the sixth copy.

The reverse side of the manifest provides instructions on how to complete the manifest and how to distribute the copies of the form. The following sections give more detailed explanation of these instructions. In reading these explanations, frequent reference should be made to the highlighted entries on the manifest form shown in Figure 5 and the distribution of the copies shown in Figure 6.

Further assistance in completing the manifest may be obtained by referring to Environment Canada's "User's Guide for the Hazardous Waste Manifest."

Part A - Consignor (Generator) Instructions (Refer to Fig. 5)

1

Provincial ID No. (Consignor)

Consignor Identification Numbers are issued by the Waste Management Branch when a person registers his special waste. This number is unique to the consignor or generator of the waste and is used to minimize errors in the computerized data system. This number is issued to the person, company or division of a company that is responsible for the special waste and must be entered on each manifest used by that person. Out of province consignor's should enter their own identification number if one is issued by their home jurisdiction.

2

Company Name

The consignor/generator must identify himself by entering his name in this space. If the consignor/generator is a company, the registered company name must be entered. The name must correspond to the name used when the Consignor Identification No. was obtained.

INSTRUCTIONS ON REVERSE

PRINT CLEARLY OR TYPE

PRESS HARD

MANIFEST-MANIFESTE

THIS MANIFEST CONFORMS TO ALL FEDERAL AND PROVINCIAL TRANSPORT AND ENVIRONMENTAL LEGISLATION REQUIRING MANIFESTING.

CE MANIFESTE EST CONFORME AUX LÉGISLATIONS FÉDÉRALE ET PROVINCIALE SUR L'ENVIRONNEMENT ET LE TRANSPORT, REQUÉRANT UN MANIFESTE

A CONSIGNOR (GENERATOR) EXPEDITEUR (PRODUCTEUR)

Provincial ID No. - N° d'id. provincial: 1

Company Name - Nom de l'entreprise: 2

Mailing Address Adresse postale - City - Ville: 3 Prov. Postal Code - Code postal

Shipping site Address - Origine de l'expédition: 4

City - Ville Prov. Postal Code - Code postal

Intended Consignee - Destinataire prévu: 5 Provincial ID No. - N° d'id. provincial: 6

Address - Adresse City - Ville: 7 Prov. Postal Code - Code postal

Receiving Site Address - Destination de l'expédition: 8

City - Ville Prov. Postal Code - Code postal

B CARRIER TRANSPORTEUR

Provincial ID No. - N° d'id. provincial: 27

Company Name - Nom de l'entreprise: 28

Address - Adresse: 29

City - Ville Prov. Postal Code - Code postal

Registration No. - N° d'immatriculation: 30 Prov.

Vehicle - Véhicule

Trailer/Rail Car No. 1 - 1er remorque - wagon

Trailer/Rail Car No. 2 - 2e remorque - wagon

Point of Entry / Point d'entrée: 31 Point of Exit / Point de sortie: 31

Carrier Certification - I declare that I have received wastes as offered by the consignor in Part A for delivery to the intended consignee and that the information contained in Part B is complete and correct. Déclaration du transporteur - J'atteste avoir reçu les déchets offerts par l'expéditeur dans la partie A en vue de leur livraison au destinataire choisi et que les renseignements inscrits à la partie B sont exacts et complets.

Yr. - An Mon. - Mois Day - Jour: 32 Name of authorized person (print) / Nom de l'agent autorisé (caractères d'imprimerie): 33

Signature: 34 Tel. No. (Area Code) - N° de tél. (ind. rég.): 35

Manifest Reference No. / N° de référence du manifeste

Reference No.s of Other Manifest(s) used / N°s de références des autres manifestes utilisés: 36

C CONSIGNEE (RECEIVER) DESTINATAIRE (RÉCEPTIONNAIRE)

Provincial ID No. - N° d'id. provincial: 37

Consignee information same as in Part A / L'information à fournir par le destinataire est la même qu'en A ☐ 38

IF NOT, COMPLETE SHADED AREA – SINON, REMPLIR L'ESPACE OMBRAGÉ

Company Name - Nom de l'entreprise: 39

Address - Adresse: 40

City - Ville Prov. Postal Code - Code postal

Receiving Site Address - Destination de l'expédition: 41

City - Ville Prov. Postal Code - Code postal

Date Received - Date de réception Yr. - An Mon. - Mois Day - Jour: 43 Time - Heure: 44 ☐ A.M. ☐ P.M.

Physical State / État physique	Shipping Name of Waste / Appellation réglementaire du déchet	Waste Identification / Identification du déchet: N° Provincial No. (Québec - Ontario only) (Québec - Ontario seul)	Waste Identification / Identification du déchet: TDGA/PIN LTMD/NIP	Quantity Shipped / Quantité expédiée	Units L or/ou kg / Unités	Classification	Packing Group / Groupe d'emballage	Packaging Containers: No. / N°s	Packaging Containers: Codes int. ext.	Quantity Received / Quantité reçu	Units L or/ou kg / Unités	Identify Any Shipment Discrepancy Problems. Attach Addendum if Necessary. Indiquer toute différence relative à l'expédition. Annexer une feuille au besoin.	Handling Code / Code de manutention	Decontamination / Décontamination: Packaging Containers Yes / Oui	Packaging Containers No / Non	Vehicle / Véhicule Yes / Oui	Vehicle / Véhicule No / Non
9	10	11	12	13	14	15	16	17	18	45	46	47	48	49		50	

Special Handling/Emergency Instructions / Manutention spéciale/Instructions d'urgence: 19 Attached / Ci-jointes ☐ Below / Ci-dessous ☐

Circulation No. - Quebec only / N° de circulation - Réservée au Québec

Date Shipped - Date d'expédition Yr. - An Mon. - Mois Day - Jour: 20 Time - Heure: 21 ☐ A.M. ☐ P.M.

Scheduled Arrival Date / Date d'arrivée prévue Yr. - An Mon. - Mois Day - Jour: 22

Consignor Certification - I declare that the information contained in Part A is correct and complete. Déclaration de l'expéditeur - Je déclare que tous les renseignements à la partie A sont véridiques et complets: 23

Name of authorized Person (print) / Nom de l'agent autorisé (caractères d'imprimerie): 24 Signature: 25 Tel. No. (Area Code) - N° de tél. (ind. rég.): 26

If Handling Code "Other" (Specify) / Si code de manutention "divers" spécifier: 51

If waste to be transferred specify intended company name / Si les déchets doivent être transférés, préciser le nom du destinataire: 52 Provincial ID No. - N° d'id. provincial: 53

Address - Adresse: 54 City - Ville Prov.

Consignee Certification - I declare that the information contained in Part C is correct and complete. Déclaration du destinataire - Je déclare que tous les renseignements à la partie C sont véridiques et complets.

Name of authorized Person (print) - Nom de l'agent autorisé (caractères d'imprimerie): 55

Signature: 56 Tel. No. (Area Code) - N° de tél. (ind. rég.): 57

FIGURE 5: MANIFEST

VI TRANSPORTING SPECIAL WASTE

The consignor is the person who offers a consignment of special waste for shipment and who is responsible for care and control of the special waste prior to shipment. Normally this would be the person who manages the facility from which the special waste is sent. Monetary ownership is not necessarily a factor in determining the consignor. A nominal sale of a waste prior to shipment is considered the first step in the transportation of a special waste. Hence, the vendor in this situation would still be the consignor.

3

Mailing Address

The correct business mailing address of the consignor/ generator must be entered. For individuals without businesses their home mailing address must be shown. The correct postal code must be entered.

4

Shipping Site Address

This address must be a physical site address, not a post office box or rural route number. If the shipping site is the same as the mailing address, it should be repeated. For rural locations, the site address may be given as a distance from a known location along a named highway or road. If there is no postal code associated with the shipping site, the space should be left blank.

5

Intended Consignee

The consignor/generator must identify the name of the party that is to receive the special waste shipment.

6

Provincial ID No. (Consignee)

The consignor must obtain the permit number of the consignee/receiver and enter it in the space provided. In British Columbia this number will most usually be the receiver's storage or treatment/disposal facility permit number.

7

Address of Intended Consignee

The mailing address of the intended consignee/receiver is entered in this space.

8

Receiving Site Address

The address of the receiving site must be given as a physical location not as a mailing address. For rural locations the receiving site address may be given as a distance from a known location along a named route. The postal code space may be left blank if there is no postal code associated with the site.

9

Physical State

Normally the physical state of the waste would be entered as solid, liquid or gas. The free liquid test described in Part 3 of Schedule 4 of the Special Waste Regulation is used to distinguish between solid and liquid wastes, if necessary.

10

Shipping Name

The correct shipping name of any special waste is obtained from the listings in Schedule II of the Transportation of Dangerous Goods Regulations. The most specific name which best describes the special waste must be used. For more details on shipping names, please refer to Section III C. of this Guide.

In general, dangerous goods which are special wastes are named by placing the word "waste" before the listed shipping name unless waste is already part of the shipping name.

Note: If a waste dangerous good:

- has a primary classification of 2 to 6.1 or 8 and a subsidiary classification of 9.2 and
- does not meet the criteria for the primary classification

its shipping name is "waste contaminated with ___" where the blank is the shipping name of the dangerous good.

If the waste is a mixture of a special waste and a non-hazardous substance the words "mixture" or "solution" are added at the end of the shipping name (eg. waste _____ mixture or waste contaminated with _____ mixture).

If the shipping name has the letters "N.O.S." with an asterisk (*) beside it or if the waste is a mixture

or solution of two hazardous substances add the specific chemical names of the substances that cause the mixture to have the primary and subsidiary classes of the "N.O.S." shipping name.

Any waste identified as a special waste by virtue of the leachate extraction procedure is named "leachate toxic waste ( )" where the space in parentheses contains the item number corresponding to the contaminant(s) in the Leachate Quality Criteria table in Schedule 4 which cause the waste to be classified as a special waste. For example, a leachable waste contaminated with arsenic, lead and mercury would be named "leachate toxic waste (4,17,19)."

11 Provincial No.

This space is used by some provinces to identify wastes according to an independent waste numbering system. For waste being transported within or into British Columbia this space may be left blank.

12 TDGA/PIN

This space refers to the product identification number found in Column II of the lists in Schedule II of the Transportation of Dangerous Goods Regulations. This number uniquely corresponds to the shipping name and serves as a cross-check to minimize errors in naming a special waste. For any special wastes not found in Schedule II of the TDG Regulations such as waste oil this space may be left blank. The PIN for leachate toxic waste is always 9500.

13 Quantity Shipped and 14 Units

The quantity of special waste being shipped must be identified either by weight or volume and the appropriate units specified in either kilograms or litres. Fractional values should not be used but rather numbers should be expressed as decimals.

15 Classification

The classification is found in Column III of the lists in Schedule II of the TDG Regulations. Some entries in this Schedule have more than one classification number. The one listed first for any given dangerous good is called the primary classification and this is the classification number to enter on the manifest if the waste meets the criteria for that class. Any numbers listed after the primary classification number are called subsidiary classifications. The first subsidiary number in the list to meet the criteria for that class should be entered on the manifest if the primary class does not apply. Any applicable subsidiary classifications must be entered in parentheses after the primary classification.

For example, ethylene dichloride is listed in Schedule II of the TDG Regulations as having three classifications: 3.2, 6.1 and 9.2. Since 3.2 is listed first, this is its primary classification, thus 6.1 and 9.2 are subsidiary classifications. If a waste containing ethylene dichloride meets the criteria of class 3.2 (ie. a flash point between -18°C and 23°C) then the classification is recorded on the manifest as 3.2 (6.1, 9.2) if the criteria for classes 6.1 and 9.2 are met. If the waste does not fall within the primary class of 3.2 criteria the waste is checked against the criteria for classes 6.1 and 9.2 and if it falls within the criteria for 6.1 this becomes its primary classification and 6.1 (9.2) would be entered on the manifest if 9.2 criteria are also met. If neither 3.2 or 6.1 criteria are met the 0.01% (100 ppm) exemption limit for 9.2 classified substances is applied and if the concentration of ethylene dichloride is greater than 100 ppm, 9.2 is the classification to be entered. If the criteria for 3.2 and 6.1 are not met and if the concentration of ethylene dichloride is less than 100 ppm the material would not be a dangerous good or a special waste on the basis of ethylene dichloride.

In situations where a substance is a mixture of hazardous substances with different hazard classifications or if a waste meets the criteria of more than one class then the Table of Precedence found in Schedule 1 of the TDG Regulations (see Table 2 in this Guide) is used to determine which primary classification should be assigned to the waste.

16 Packing Group

The packing group is a Roman numeral (ie. I, II or III) assigned to indicate a level of hazard for some classes of dangerous goods and special waste. Not all classes have packing groups. The packing group is found in Column VII of List II of Schedule II of the TDG Regulations. Reference should also be made

to the criteria for the packing groups found in Part III of the TDG Regulations. For mixtures, the packing group would correspond to the correct shipping name and classification of the special waste.

17
Packaging No. and
18
Packaging Codes

The number of individual packages used to ship the special waste must be entered in column marked "No." This helps the receiver to check that containers were not added or lost en route. The codes for the type of packaging used in the shipment must be entered in the column marked "codes."

The packaging codes are:

01 drum
02 tank
03 bulk
04 carton
05 bag
06 roll-off (container or chassis)
07 other

19
Special Handling/Emergency Instructions

The consignor/generator should list or attach any instructions which may help the carrier or emergency response personnel in case of a spill or other accident. The appropriate box in the top part of the space should be marked to indicate whether the instructions are "attached" on a separate sheet or listed in the space provided. Such instructions would typically advise of who to contact in an emergency, how to handle the material or container, materials that should not come in contact with the special waste or safety equipment to be used by workers.

20
Date Shipped

The shipping dateis always recorded numerically in the format of year, month, day (eg. 88/03/10 refers to March 10, 1988).

21
Time

The exact time the shipment leaves the consignor's possession must be recorded and the appropriate small box marked to indicate whether the time is A.M. or P.M.

22
Scheduled Arrival Date

The intended date of arrival of the shipment at the receiving site shall be indicated. The format for recording the date is year, month, day.

23
Consignor Certification

This statement is a declaration by the consignor that "the information contained in Part A is correct and complete." At this point in the completion of the manifest a check should be made to ensure that all of the information is correct.

24
Name of Authorized Person

The name of the consignor or a person authorized to act on behalf of the consignor must be clearly printed or typed in the space provided. This person must be accountable for the consignor's responsibilities. The consignor's authority cannot be delegated to anyone who is not responsible for a shipment.

25
Signature

The signature of the authorized person must be provided. This is to check against fraudulent use of the manifest system.

26
Telephone No.

The business telephone number of the authorized person must be provided. This is required to provide a means of quick access to information about the special waste in times of an emergency or for clarification of data.

36
Reference No. of Other Manifests

Whenever more than one manifest is required to describe a special waste shipment the consignor must indicate the numbers of other manifests associated with the shipment. If space

does not permit the complete list of manifest reference numbers a separate list should be attached and this space on the manifest form should read "see attached list."

Consignor's Duties on Completion of the Manifest

- After completing Part A of the manifest form the consignor gives the manifest form to the Carrier for completion of Part B.
- Any other documents required for the shipment must also be given to the Carrier.
- The Carrier will complete Part B and return Copies 1 and 2 of the manifest form to th e Consignor.
- Copy 2 of the completed manifest is retained by the Consignor for a period of 2 years.
- For shipments within British Columbia, the Consignor sends Copy 1 of the manifest form to:

  Waste Management Branch
  Ministry of Environment and Parks
  Parliament Buildings
  Victoria, British Columbia
  V8V 1X5

- For shipments to other provinces in Canada, the Consignor:
  - sends Copy 1 of the manifest to the B.C. Waste Management Branch; and
  - sends a photocopy of Copy 1 of the manifest to the receiving jurisdiction (see reverse side of the manifest for addresses).
- For international shipments from British Columbia the Consignor is responsible for:
  - sending Copy 1 of the manifest to the receiving jurisdiction;
  - sending a photocopy of Copy 1 of the manifest to the Waste Management Branch and to Environment Canada;
  - sending photocopies of Copy 3 of the manifest with Parts A, B and C completed (after shipment is completed) to the British Columbia Waste Management Branch and Environment Canada (see addresses on the reverse side of the manifest).

Part B - Carrier Instructions (Refer to Fig. 5)

27 Provincial ID No.

With a few exceptions, anyone in British Columbia who carries a special waste for which a manifest is required (ie. more than 5 litres or 5 kilograms) must have a Licence to Transport Special Waste. The licence number must be entered in the space marked Provincial ID No. in Part B of the manifest. Licences may be obtained by completing an application form and submitting it to the Director of the Waste Management Branch. See Section VI B. of this Guide for more information on obtaining a licence to transport special waste.

28 Company Name

The carrier must identify himself. If the carrier is a company, the registered company name must be provided.

29 Carrier's Address

The business mailing address of the carrier is required. The correct postal code must be provided.

30 Vehicle Identification

Each vehicle involved in a special waste shipment must be identified by a number like the licence plate number for road vehicles. For vehicles other than motor vehicles, registration number or similar unique numbers are acceptable. For licence plate numbers, the issuing province should be identified with a 2 letter abbreviation in the column provided.

31 Point of Entry/Point of Exit

Border crossing point should be indicated for international and interprovincial shipments.

32 Date

The carrier must indicate the date that he takes charge of the waste shipment. In most cases

this date should coincide with the shipping date indicated by the consignor in item 20 above.

33

Name of Authorized Person

The carrier must type or print the name of the person authorized to act for the carrier. In most cases this will be the driver or other person responsible for the shipment while it is en route.

34

Signature

The signature of the authorized person identified in item 33 is required. This signature serves to verify that the wastes have been accepted by the carrier and that the shipment matches the description provided by the consignor.

35

Telephone No.

The complete telephone number of the carrier is to be entered. This is to be used in case of emergency or at other times when information needs to be obtained quickly from the carrier.

Carrier's Duties Upon Completion of the Manifest

- Copies 1 and 2 of the manifest are returned to the consignor after Part B has been completed.
- Copies 4 to 6 of the manifest are carried with the consignment:
  - for trucks the manifest must be kept in the cab within the reach of the driver, in a pocket on the driver's door or on the driver's seat if the driver is not with the vehicle.
  - for trailers in parking areas (no tractor unit attached) a copy must be kept by the person in charge of the parking area.
  - for ships and ferries a copy must be with the master or the person attending the ship if it is not underway.
  - for railcars a copy must be:
    - with the train crew if it is en route
    - with the yardmaster if it is in a railway yard
    - with the foreman of a repair shop or railroad repair crew if repairs are being done
    - with the train dispatcher or his designate or
    - for cases not covered above, in a waterproof receptacle attached to the transport unit
- give a copy of the manifest and any additional documents.to any person who takes over control of the consignment
- rail carriers must record on the manifest the unit number of the rail car which has the special waste consignment.
- upon delivery of the consignment the manifest and any additional documents must be given to the consignee.
- retain Copy 4 of the completed manifest for a period of 2 years.
- make any retained manifest copy available for inspection.

C. Receiver's Instructions (Refer to Fig. 5)

36

Reference No. of Other Manifests

If a special waste shipment involves more than one manifest the receiver must check this space on the manifest to ensure that all copies have been received. This is especially critical when the shipment involves:

- more than one carrier
- large shipments with more wastes than can be described on one manifest or
- the transferring of consignments to a second shipment.

37

Provincial ID No. (Consignee)

All special waste management facilities except certain recycle and on site treatment facilities are required to have some form of authorization under the Waste Management Act by January 1, 1990. Where this authorization is in the form of a permit or an approval a number will be issued to the

facility. The consignee must enter this number on the manifest.

38

Consignee Information - Same as in Part A

If the receiver's name, address, postal code, receiving site address and postal code are identical to the information supplied by the consignor in Part A the receiver may simply mark the box in this space and proceed to the date received in item 43. If the information is different in any significant way then the shaded areas of Part C (see items 39 to 42 below) must also be completed.

39

Company Name

The receiver's name must be provided if it has not been given by the consignor in Part A of the manifest. For companies this must be the registered company name.

40

Address

The registered business address of the receiver must be entered. It is important that the correct postal code also be included.

41

Receiving Site Address

The physical location of the receiving site must be provided. This address should correspond to the address given by the consignor in Part A. For remote locations, distances and highway or road names are acceptable.

42

City, Province, Postal Code

Where possible, the city, province and correct postal code of the receiving site must be provided.

43

Date Received

The date on which the shipment is accepted by the receiver should be entered. The format is year, month, day (eg. 88/03/06 for March 6, 1988).

44

Time

The time of acceptance of the shipment must be entered and the AM or PM box marked.

45

Quantity Received

For each waste described on the manifest the receiver must indicate the quantity delivered in the shipment.

46

Units

The correct units consistent with those used by the consignor in Part A should be indicated.

47

Shipment Discrepancies

The consignor is asked to identify any discrepancies, in the quantity or type of wastes delivered, from those described on the manifest. Discrepancies of ±5% on the amount of waste must be immediately reported by telephone to the director or a manager for further instructions. Any problems with the containers, the manifest or any other aspect of the shipment must be reported on the manifest to the director or a manager. In some cases it may be necessary for the receiver to contact the consignor for more information in order to account for possible discrepancies. Such contacts should also be noted. If a shipment has been refused the reason for refusal should be noted.

An addendum sheet should be attached to Copy 3 of the manifest if more space is required to explain discrepancies.

48

Handling Code

The manner in which the waste is to be managed must be indicated by one of the handling codes found on the reverse side of the manifest. These codes are:

01	storage
02	thermal treatment
03	chemical treatment
04	physical treatment
05	biological treatment
06	landfill
07	recycled
08	other (specify)

If Code 08 is entered, the specific type of handling method should be entered in the space provided below. Where a series of management methods will be used, the code for the final handling method to be used by that receiver should be entered.

49

Packaging Decontamination

The receiver should indicate whether the container and interior packaging used in a special waste shipment are to be decontaminated at the receiver's site.

50

Vehicle Decontamination

The receiver should indicate whether the vehicle used to transport the special waste shipment is to be decontaminated.

51

If Handling Code "Other" (Specify)

Any receiver who has entered 08 as the handling code must specify how the waste will be treated or managed.

52

Transfers

If the shipment is being forwarded to another facility the receiver must indicate the next intended receiver of the waste. This situation arises most often where waste is collected by a broker before being sent to a final treatment or disposal facility.

53

Provincial ID No.

The permit or approval number of the next receiver must be indicated if the shipment will be transferred to another receiver.

54

Address

The address of the next receiver must be entered.

55

Authorized Person

The name of the person authorized as the receiver, to take responsibility for the waste and Part C of the manifest, must be clearly printed or typed. This authority cannot be transferred to a person who is not responsible for the waste or the contents of Part C of the manifest.

56

Signature

The authorized person indicated above must sign the manifest as the receiver to certify that the information contained in Part C of the manifest is correct and complete.

57

Telephone No.

The telephone number of the receiver must be clearly indicated. The area code should always be included.

Consignee's Duties Upon Completion of the Manifest

- Copy 3 and any additional documents must be mailed within 2 working days to:

  Waste Management Branch
  Parliament Buildings
  Victoria, B.C.
  V8V 1X5

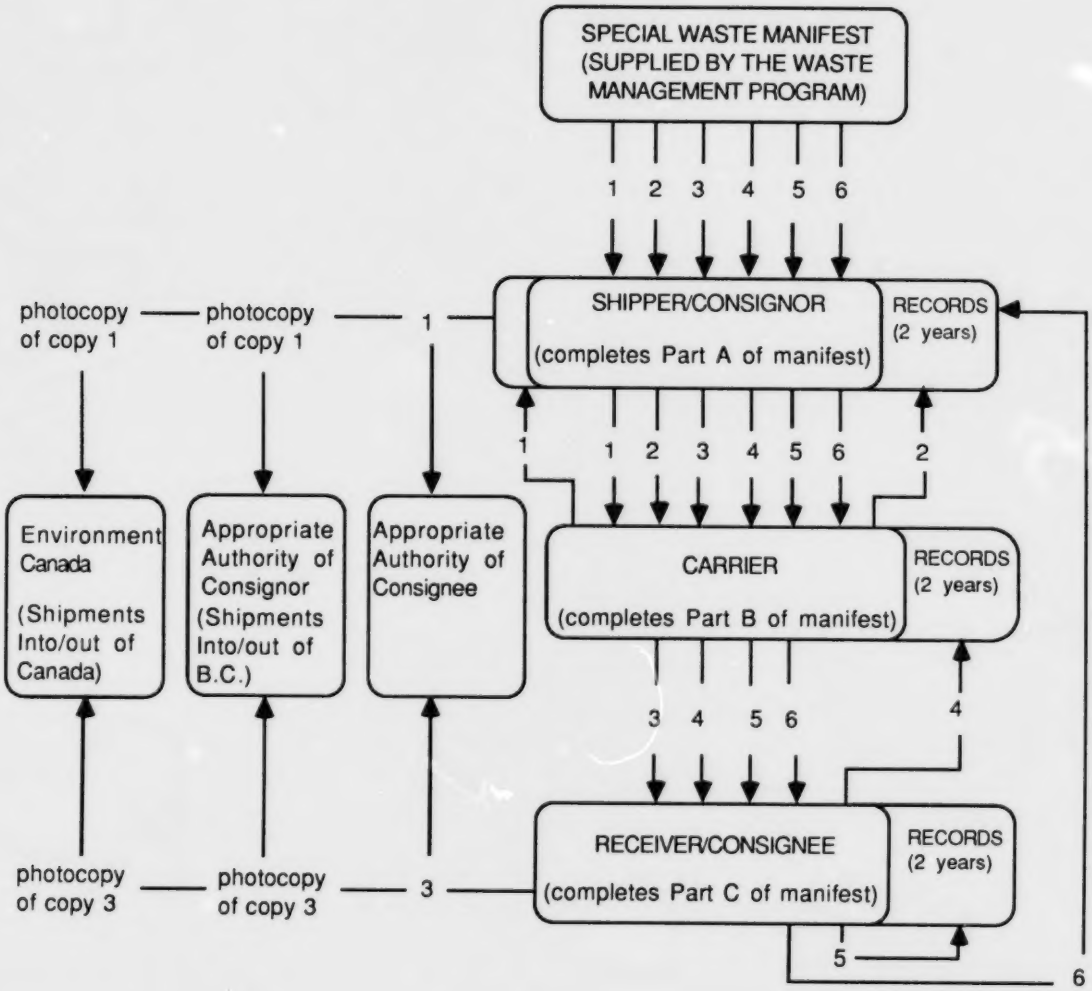
- For interprovincial or international shipments a photocopy of Copy 3 should also be mailed to the jurisdictions indicated on the reverse of the manifest. In most cases this will be the two jurisdictions which regulate the consignor and the receiver.)

- Copy 4 is returned to the carrier for his records.

- Copy 5 is retained by the receiver and must be available for inspection for up to 2 years.

- Copy 6 is mailed to the consignor.

FIGURE 6: DISTRIBUTION OF THE MANIFEST



Sheet 1 (white copy) - Mailed by Consignor to Receiving Jurisdiction (upon completion of Parts A & B)
Sheet 2 (green copy) - Retained by Consignor for 2 years (upon completion of Parts A & B)
Sheet 3 (yellow copy) - Mailed by Consignee to Appropriate Authorities (upon completion of Parts A,B & C)
Sheet 4 (pink copy) - Retained by Carrier for 2 years
Sheet 5 (blue copy) - Retained by Consignee for 2 years
Sheet 6 (gold copy) - Mailed by Consignee to Consignor

CARRIER'S REGISTER FOR BULK LOADS FROM MULTIPLE CONSIGNORS

Instructions: The Carrier shall: (a) complete the form;
(b) keep the form with the manifest;
(c) after the bulk load is completed append copy 1 of this form to copy 1 of the manifest, and
(d) attach copy 2 of this form to copy 4 of the manifest.

Collection Point Information: Waste Name: _____ Reference Manifest No.: _____

Name	Address	City	Postal Code	Telephone	Quantity Kg or L
1					
2					
3					
4					
5					
6					
7					
8					
9					
10					
11					
12					
13					
14					

Carrier's Name (Please Print) _____ Vehicle Licence Plate No. _____

Date: _____ (YY/MM/DD) Driver's Name _____ (Please Print) Driver's Signature _____

FIGURE 7: CARRIER'S REGISTER FOR BULK LOADS FROM MULTIPLE CONSIGNORS

E. Multiple Consignors

Section 47 of the Special Waste Regulation makes a provision for more than one consignor to use the same manifest where the same type of special waste is transported in a bulk load by a single carrier. This provision is primarily for the benefit of recycling operations such as oil collectors, solvent reclaimers or battery recyclers where a large number of pickups are made before a bulk load is complete.

The Regulation allows the carrier to complete Part A of the manifest for the consignors by writing the word "multiple" for the company name and the shipping site address. In addition, the carrier must also complete a "Carrier's Register" to record all of the required information for each consignor. The carrier must use the Carrier's Register specified as Form 3 of Schedule 5 of the Regulation (see Figure 7) or he may use his own form provided it contains the equivalent information.

Copies of the Carrier's Register must be attached to Copy 1 and Copy 4 of the manifest.

F. Rejected Shipments

Occasionally a receiver may refuse to accept a special waste shipment delivered to his facility. Sometimes, the contractual agreement between the shipper/consignor and receiver/consignee will specify the procedures to correct this situation.

However, if a receiver/consignee has a shipment arrive without a manifest, with an incomplete or incorrectly completed manifest, or if the shipment arrives in a hazardous condition, further action must be taken. If no manifest is provided, or if the shipment poses a hazard, the nearest Regional Waste Management Program office should be notified as soon as possible. See Appendix A for a list of addresses and telephone numbers of these offices.

If there is an omission or a discrepancy between the waste shipment and the information provided on the manifest by the shipper/consignor, the receiver/consignee should promptly contact the shipper/consignor to resolve these issues before the shipment is accepted and unloaded. If the shipper/consignor cannot be reached the nearest Regional Waste Management Program office should be consulted. On the other hand, if there is an omission or discrepancy with the information in the carrier's part of the form, the receiver/consignee should resolve these items with the carrier before accepting the load.

If, after consultation with the shipper/consignor and the Waste Management Program it is determined that the shipment must be returned, the receiver/consignee should inform the Waste Management Program by telephone of this decision and should note on his section of the manifest that the shipment has been returned. The remaining manifest copies should be distributed in the usual manner.

G. Labels and Placards

For most special wastes, the Transportation of Dangerous Goods Regulations require the consignor to provide labels on containers and placards for vehicles carrying special waste. Specifications for the size, colour and locations of each can be found in the TDG Regulations. The designs of each are shown on the mini posters at the back of this Guide. Generally, each class of dangerous goods has a unique label which also corresponds to an equivalent placard. The label and placard to be used in any particular case depend on the classification of the special waste and whether the load contains other consignments of dangerous goods.

Labels must be placed on the outside of any container of special waste. If the container is larger than 2 cubic metres, labels must be placed on at least 2 opposite sides. Small containers inside larger containers such as in labpacks and overpacks also need to be labelled. In addition to labels, containers of less than 454 litres and overpacks must also clearly display the shipping name, product identification number (PIN) and for Class 3 wastes, the flash point of the special waste. In some cases where a waste has a primary and secondary classification, two labels may be required for each container to indicate dual classifications. Containers which have been emptied but not cleaned must continue to display the appropriate label for the waste previously held in the container. After a container has been cleaned or purged, the label must be removed.

Placards might be thought of as labels for vehicles or transport units. Apart from a few exceptions like bulk or mixed loads, infectious waste and radioactive waste the symbols for placards are

identical to those for labels. Placards must be displayed on all four sides of a vehicle so that they are clearly visible and must be removed after the transport unit has been cleaned or purged. The product identification number is to be displayed on a vehicle carrying a bulk load of a special waste. Mixed loads with different primary classifications must display the "DANGER" placard. An owner or lessee of a tank used to transport special waste must mark the tank on two opposite sides with his name and address and any serial numbers assigned to the tank.

If a tank used to transport special waste is found to be leaking the person in charge of the tank must mark it on both sides near any serial or identification numbers with the words **"LEAKING TANK - DO NOT LOAD UNTIL REPAIRED"** and place a tag with these words on any manholes or valves used to fill the tank. He must also mark the tank with an **"X"** near the location of the leak if it is known.

H. Training

Under the TDG Regulations anyone who is handling or transporting special waste must either be trained to handle that waste or must be working under the direct supervision of a trained person. An employer is responsible for ensuring that his employees are trained to handle all special waste which are encountered in the employee's normal duties. The employer must issue a Certificate of Training showing the date the employee received the initial training, the dates of any subsequent training and the aspects of handling special waste for which the employee was trained.

Further details on training related to the transportation of special waste may be found in Part IX of the TDG Regulations.

VII SPECIAL WASTE MANAGEMENT OPTIONS

The proper management of special wastes involves much more than simple treatment or disposal. There is a hierarchy of management options for dealing with wastes from source through to disposal.

The preferred option in this hierarchy is to prevent the waste from being produced in the first place. This is usually accomplished by changing a manufacturing process, using a less hazardous raw material or simply using production methods not associated with the generation of hazardous by-products. Often this is the safest and most economical method of dealing with special wastes.

If the production of a special waste cannot be prevented the next level of the action hierarchy is to recycle the waste. Many manufacturers have found that there is profit in their waste streams. In some cases a waste from one manufacturer can be beneficially used in another industry. This is the basis of several waste exchange programs which bring together waste producers and waste users.

The Recycling Council of British Columbia has set up an exchange program for wastes in British Columbia. Anyone wishing to exchange wastes in the Province is encouraged to contact:

Recycling Council of British Columbia
2150 Maple Street
Vancouver, B.C.
V6J 3T3
(Telephone (604)731-7222).

On a broader scale, the Canadian Waste Material Exchange publishes a bi-monthly bulletin which lists wastes wanted or offered throughout Canada. For more information on this service, contact:

Canadian Waste Material Exchange
Ontario Research
Sheridan Park Research Community
Mississauga, Ontario
L5K 1B3
(Telephone (416)822-4111)

Unfortunately, not all wastes can be eliminated, reduced, or recycled. The next level of the action hierarchy calls for ways to deal with wastes at the site of the generator. This eliminates the risk of transporting the special wastes. Simple treatment techniques such as neutralization of acids and alkalis, precipitation and settling to reduce waste volumes and some forms of oxidation may often be used on the site of the waste generator. Table 4 lists various methods for the treatment of some common special wastes. Of course any treatment system which involves a discharge or emission to the environment would require authorization under the Waste Management Act. Figure 8 summarizes the forms of authorization required for each special waste management technique. For additional information on obtaining authorizations, see Section XX of this Guide.

The final option for dealing with special wastes is to transport the waste to an off site treatment/disposal facility where a wider range of specialized management processes is available. For some wastes an off site facility is often the only option which is safe and economical.

Later sections in this Guide describe in more detail the requirements for all of the various types of special waste management facilities. At this point it is sufficient to say that preference is given in the regulations to those options at the top of the management hierarchy. Several factors were considered in developing the regulatory requirements for each management option. The degree of exposure or risk to the public and the environment was a major consideration. Hence, the regulations give preference to on site recycling facilities over off site disposal facilities.

The degree of surveillance required to protect the environment is important. This, in turn, depends on factors such as the quantity and composition of the waste and the duration of the management technique. A small quantity of mildly hazardous material, if stored for a short time would require fewer precautions than a large amount of an extremely hazardous material to be stored permanently.

TABLE 4: EXAMPLES OF OPTIONS FOR MANAGEMENT OF SPECIAL WASTES

SPECIAL WASTE TYPE	WASTE MANAGEMENT OPTIONS
Acids and Alkalis	• recycling • neutralization
Asbestos	• solidification • containment during transport • landfill
Chromium	• recycling • chemical reduction to trivalent state • physical/chemical treatment • solidification and secure landfill
Cyanides	• recycling • chemical oxidation • physical/chemical treatment • solidification and secure landfill • high temperature incineration
Fluorides	• physical/chemical treatment • solidification and secure landfill
Heavy metal wastes	• recycling • physical/chemical treatment • solidification and secure landfill
Infectious waste	• biological treatment • thermal destruction • chemical disinfection
Oils	• recycling • physical/chemical treatment • biological treatment • incineration
Organic wastes (halogenated)	• recycling • physical/chemical treatment • high temperature incineration
Organic Wastes (non-halogenated)	• recycling • biological treatment • physical/chemical treatment • incineration
Pesticides	• biological treatment • physical/chemical treatment • high temperature incineration
Sulphides	• physical/chemical treatment • chemical oxidation

VIII REQUIREMENTS FOR ALL SPECIAL WASTE FACILITIES

This section describes the requirements which must be met by all special waste facilities. These requirements include siting standards and all general safety and protective provisions. Where an operation meets the definition of a specific type of special waste facility, Sections IX to XVI of this guide should be checked for further detailed requirements. Each of these sections describe the requirements for a particular type of special waste facility. Recycle facility requirements are discussed in Section IX, requirements for storage facilities are discussed in Section X, etc. If a facility can be described by more than one of the facility definitions, the requirements for each type of individual facility must be met. Therefore, for example, a mobile incinerator is required to meet the requirements for incinerators and mobile facilities.

A. Discussion of Definitions

In this section some of the more important legal definitions are discussed. Part I of the Special Waste Regulation should be reviewed for those definitions not discussed below.

1. 100 Year Floodplain

Floodplain levels have been mapped for many parts of the major watercourses in B.C. Copies of the maps with this information may be obtained through Maps BC, 553 Superior Street, Victoria, B.C., V8V 1X5. For those floodplains not currently mapped the Special Projects Section of the Water Management Branch may be able to supply additional information in order to determine the 100 year floodplain level.

2. Approved

This term is used frequently in the Special Waste Regulation where requirements are set by the director or a manager for situations in which a site specific review or an on site appraisal is required before the final terms or conditions of a requirement can be established. For something to be "approved" it must be in writing and it must be issued by a manager, the District Director of GVRD, the Director of Waste Management or by the Minister of Environment and Parks. An "approval" in this context can take the form of an order, a permit, an approval issued by a manager, a Waste Management Plan, a licence or simply a letter.

The terms "approved" and "approval", as used in the Special Waste Regulation, have a broader meaning than "an approval" under Section 9 of the Waste Management Act. An approval under Section 9 of the Act is only one possible form of approval under the Special Waste Regulation.

3. Buffer Zone

A buffer zone is an area of land which separates a facility from surrounding land uses. Normally a buffer would be vacant land which is not developed during the operating life of the facility. Its principle purpose is to mitigate any negative aesthetic aspects of the operation. A buffer zone does not have to be owned by the facility owner, but it should be under his control.

4. Bulk Load

A bulk load is a shipment of special waste which is made up of consignments from more than one shipper. The waste may by carried in one or more large containers and all of the waste in each container must be of the same type.

5. Consignor, Carrier and Consignee

Under most circumstances it is not difficult to identify each of these parties for any waste shipment. The consignor is the person who has the waste and is responsible for it before it is shipped. The carrier is responsible for transporting the waste to its intended destination. The consignee is the person who accepts the waste at the receiving site. In cases where a broker or agent is used to facilitate the shipment these definitions may not always be clear. This is especially true where the agent is contracted to transport and also dispose of the waste. The responsibility of any person involved in the shipment cannot be transferred to any other person by virtue of a contract. Therefore, although a carrier may write information on a manifest for a consignor it is the consignor's responsibility to ensure that the information is correct.

Ownership of a special waste is only one of the factors to be considered in determining a person's responsibility under the Regulation. The person who has "control and possession" of the waste is usually the first person to be held responsible for it. Federal authorities have interpreted the consignor to be the person in charge of the facility from which the waste is sent.

6. Dangerous Goods

The TDG Regulations give a complete definition and description of "dangerous goods". In almost all cases "waste dangerous goods" are special wastes under the Special Waste Regulation.

VIII REQUIREMENTS FOR ALL SPECIAL WASTE FACILITIES

7. Disposal

Disposal is any introduction of waste into the environment.

8. Facility

A facility can be any piece of equipment or process which is used to handle or deal with a special waste. The most common types of facilities are listed in the definitions. This list does not necessarily contain all of the facility types that may be in use. Where a facility is not listed, the regulations still apply. Requirements in Sections 3 to 14 of the Special Waste Regulation and in any permit, approval or plan would have to be met.

9. Incinerator

An incinerator is the most common type of thermal treatment facility which uses a controlled flame to achieve combustion. Processes which use pyrolysis and plasma arc technology are not incinerators but are defined as thermal treatment systems. This distinction is important in that certain requirements for each type of facility could be different.

10. Indoor

For the purposes of this regulation an indoor facility is an above ground structure used to protect an operation or a waste from the weather. Inflatable and portable structures could be considered indoor depending on the individual waste being managed at the facility.

11. Labpack

A labpack is a container used to store or transport smaller inside containers of special waste. In most cases a metal drum with a tight fitting gasketted lid and a plastic liner would be a suitable labpack. Each small inside container should be wrapped in clear plastic and labelled to indicate the contents. Only compatible wastes may be placed in the same labpack. A labpack outer container cannot exceed 454 litres.

12. Land Treatment

The most common forms of land treatment are "land farms" or "bio farms" which use natural or enhanced biological degradation to treat a waste. The facility must be designed to firstly contain the waste and secondly to maximize the biological activity. An area where waste is simply spread onto the ground without a prior technical investigative study or other management action would not be an acceptable land treatment facility.

13. Leachate Toxic Waste

This term is used to describe those wastes which have hazardous components that tend to be soluble in water at a pH of 5.0. At the present time there are only 31 listed components which must be checked in the leachate test. Work is proceeding on a national level through the Canadian Council of Resource and Environment Ministers (CCREM) to expand this list so that more compounds and generic groups of chemicals will be analyzed. At this time the leachate test criteria is only used in a few provinces and in the United States; however, it is expected to become a part of the criteria for classifying hazardous waste under the TDG Regulations.

14. Long Term Storage

The Special Waste Regulation recognizes that a secure landfill is not necessarily the only way a waste residue could be put into a final resting place. This allows a waste facility operator some flexibility in designing a final disposal option. It means he does not have to use a conventional secure landfill to dispose of residues like incinerator ash and solidified inorganic waste.

The concept of a long term storage facility grew out of the idea of an above ground secure landfill and evolved to include any type of above ground structure designed to keep special waste from being released to the environment over a very long period of time. It is possible that such a structure may even be more secure than a traditional secure landfill since all of the waste would be readily available for inspection, recycling or removal if necessary.

The Special Waste Regulation does not specify the physical form of a long term storage facility but minimum design requirements are set. This is to allow for more creativity and innovation in the design of final waste repositories. In theory such facilities could be as simple as a secure dedicated warehouse or as imposing as a concrete mosoleum.

15. Manage

The term "manage" is intended to encompass any activity which involves special waste. It spans the full spectrum of activity from the point of initial waste generation to the final resting place of any residues.

VIII REQUIREMENTS FOR ALL SPECIAL WASTE FACILITIES

16. Mobile Facility

Any facility which is designed to be transported from site to site is a mobile facility. Usually these are chemical or thermal treatment units mounted on trucks, trailers or rail cars. The regulation limits the number of hours of operation and the quantity of waste which may be treated at these facilities before they would no longer be considered mobile.

17. Owner

The term owner includes the operator of a facility. In cases where there is a contractual arrangement between an owner and an operator the responsibilities of the owner may rest solely with the operator or with the owner depending on the terms of the agreement.

18. Principle Organic Hazardous Constituent (POHC)

Principle organic hazardous constituents are those compounds in a special waste which are selected for test purposes to prove the capabilities of a treatment process. This is especially applicable to incinerators and other thermal treatment systems, although POHCs may also be selected to test chemical or physical treatment processes. In all cases a manager or the Director of Waste Management decides which chemical components should be use in a test. In some cases he may specify a surrogate compound to be used as an alternative if he considers a test to be too risky with the waste itself or if monitoring complexities make it necessary.

19. Product of Incomplete Combustion (PIC)

Under conditions of incomplete combustion incinerators can emit chemical compounds in the exhaust which are harmful derivatives of the original waste. These derivatives are called products of incomplete combustion (PIC). In some cases PICs can be more harmful than the original material being burned. It is important to try to identify all predominant PICs when a thermal treatment facility is being tested on a new waste material.

20. Recharge Area

A recharge area is an area of land that supplies water to an aquifer. Where an aquifer is exposed or open to the surface, the recharge area is the entire area above it. If the aquifer is "confined" by an overlying layer of impervious soil or rock the recharge area can be a great distance from the area where a groundwater supply is actually used.

21. Recycleable Material

At times it is very difficult to determine if a material emanating from a process is a waste, a useful product or a recycleable material. The key words in the definition of recycleable material are "...dangerous goods that are no longer used for their original purpose and would be disposed of as a waste...". The intent of waste generator has a bearing in this definition but the current monetary value is not a factor.

22. Recycle

In the Special Waste Regulation recycle has a relatively narrow definition. To meet this definition the waste must be "wholly utilized" in a process or repackaged and offered for retail sale to meet a realistic market demand. Processes which produce a residue for disposal or which do not wholly utilize the material are actually treatment facilities.

23. Short Term Storage

The Special Waste Regulation does not specify a time limit for waste held in a short term storage facility. The length of time a waste can be held in storage before it must be treated or disposed will be determined by a permit or other form of authorization. The time limit will be set directly by a date or a time period indicated on the permit or by a limit on the total amount of waste which may be stored at the facility. The owner of a short term storage facility must make provisions for the periodic and final disposal of all waste in storage, otherwise the facility would have to meet the requirements of a long term storage facility.

24. Special Waste

The connection between the Special Waste Regulation and the TDG Regulations is found in the reference to "dangerous goods" which are defined and regulated in the Transportation of Dangerous Goods Act and Regulations. Waste dangerous goods under the TDG Regulations are special wastes under the Special Waste Regulation. The only exemptions from the definition of special waste are residential refuse, sewage, dangerous goods that are being returned to a manufacturer and radioactive material included in Class 7 of the TDG Regulations.

VIII REQUIREMENTS FOR ALL SPECIAL WASTE FACILITIES

25. Treatment

Treatment is the use of a process or operation to change any physical, chemical or biological characteristics of a waste so as to eliminate or reduce the volume or any hazardous properties. Some activities such as reclamation of solvents or used oil are not recycle facilities but, in fact are treatment facilities for the purposes of the Special Waste Regulation.

26. Waste Asbestos

Any waste containing 1% or more of friable asbestos is a special waste. The key phrase in this definition is "friable asbestos fibres or asbestos dust". Any asbestos bound within a solid matrix such as in a cement or in a hardboard would not be a special waste.

27. Waste Oil

The definition of waste oil is restricted to refined oils which have become unsuitable for their original purpose due to impurities or loss of original properties. It is not intended to encompass crude oil or any oil generated at the wellsite.

28. Waste Pile

A waste pile is a facility where solid special waste is stored or treated. This definition does not include wastes in containers and therefore would normally apply to the storage of bulk wastes. The waste may be stored outdoors if the weather does not have a detrimental effect on it.

B. General Exemptions and Other Provisions (S. 2)

The Special Waste Regulation has a number of exemptions which may apply to a waste or a facility. These exemptions are found in Section 2 of the Regulation and are briefly described below.

1. Quantity (S. 2.(6))

The Special Waste Regulation does not apply to discrete amounts of waste less than 5 litres or 5 kilograms. However, if the waste is generated over a period of time the exemption of 5 litres or 5 kilograms is counted over 30 days. Therefore, even a waste generated at a rate of 167 grams per day (5.0 kg/30 days) could be a special waste. Also, accumulations must not exceed 5 litres or 5 kilograms at any time for this exemption to apply.

2. Authorization of Existing Facilities (S. 2.(1))

Any special waste facility which is in operation on the day the Regulations come into force does not require a separate authorization to continue handling special waste until January 1, 1990. This provision allows a waste management facility owner reasonable time to bring his operation into compliance with the Regulation before seeking legal authorization to continue. However, generator registration as described in Section IV is still required.

3. Common Facility Definitions (S. 2(2))

The owner of a special waste facility must comply with all of the requirements for each type of facility that describes his facility. For instance, a mobile PCB chemical treatment unit would have to meet the requirements for mobile facilities and for treatment facilities as well as the general requirements for all facilities found in Sections 3 to 14 of the Regulation.

4. Existing On Site Facilities (S. 2(4) & (5))

An on site facility is an operation where special waste is managed on the same property where it was produced. On site facilities which are operational when the Regulation comes into effect are not required to meet operational requirements or performance standards until January 1, 1990 unless the Minister sets an alternate compliance date. The Minister may set a compliance date which is before or after January 1, 1990.

An existing on site facility is not required to comply with the siting standards until a date set by the Minister for that facility.

5. On Site Volume Reduction (S. 2(7))

An on site treatment facility is exempt from Section 3.2 of the Act and the siting, operating and performance requirements for a treatment facility if it is only used to reduce the volume of a special waste. This is a positive measure to encourage waste generators to physically minimize the amount of waste to be sent off site for treatment.

6. On Site and Off Site Recycling (S. 2(8))

An <u>on site</u> recycle facility is exempt from Section 3.2 of the Act and the siting, operating and performance requirements of the Regulation, if the special waste being processed is normally a

component of the raw material feed or the products of the industrial process. Thus, for example, the owner of a lead smelter could recycle his own waste batteries by mixing the scrape plates with the ore concentrate. But, a forest company would not be able to claim the on site recycle exemption, if they wanted to dispose of a PCP contaminated wood waste in a pulp mill power boiler. In the first case the lead is a component of the feed and the product from the smelter while in the second example the PCP is not part of the raw materials or the products of a pulp mill.

Off site recycle facilities receive the same exemptions but only if the amount of special waste being processed there is less than 5% of the incoming raw material. In the example above, the lead smelter would also be exempt from the regulations if it kept the amount of off site waste below 5% of its input production capacity. This is another positive measure designed to encourage recycling.

7. Existing Off Site Facilities (S. 2(3))

An off site facility, which is operational when the Regulations come into effect, does not need to comply with the siting standards, operational requirements and performance standards until January 1, 1990 unless the Minister sets an alternate date. The Minister may set a compliance date which is before or after January 1, 1990.

8. Mining Wastes (S. 2(9))

If waste rock or tailings from a mine happens to be a special waste, certain sections of the Regulation do not apply, if no other special wastes are involved. Care should be taken however to see that other requirements like a closure plan are not overlooked. If a company wanted to dispose of any other special waste in their tailings pond they would have to obtain specific approval in a permit or other form of authorization.

In cases where waste rock and tailings are known to be special wastes, the Waste Management Program will determine appropriate measures for environmental protection as part of the permit evaluation process.

9. Substitutions (S. 2(10))

The Director of Waste Management is able to substitute any requirement for any regulatory requirement, except for those cases when that right is exclusively reserved for the Minister. In making a substitution the Director must consider it necessary to protect the public or the environment. Such substitutions only apply to individual cases.

C. Siting Standards (S. 3)

The siting requirements discussed in this section apply to all facilities. This means that whether the facility is used for storage, treatment or any other management option these requirements must be met. The only exceptions to this are found in Sections 2, 22, 48(2)(3) and 51 which concern existing facilities, mobile facilities, small quantity storage, and applications for changes to regulatory requirements, respectively.

1. 100 Year Floodplain

The intent of this requirement is to preclude the operation of any facility in an area where it could be affected by a major flood unless the facility was protected to prevent physical damage to the waste. If any difficulty is encountered in determining the 100 year flood level at a particular site the nearest office of the Water Management Branch should be consulted for assistance. The owner of any operation built within a 100 year floodplain must show to the satisfaction of the Director or a Manager that the facility is "designed, constructed, operated and maintained to prevent washout".

2. Holocene Faults

Holocene faults are geological faults which have been active during the last 11,000 years. It is recognized that geological faults are not always obvious or known especially in areas where there has been little geological exploration. Information on faults may usually be obtained through the offices of the Ministry of Energy, Mines and Petroleum Resources.

3. Tsunami

Tsunami or tidal waves are usually the result of earthquakes at sea and therefore only affect coastal waters. Areas to be especially careful of are long narrow fiords and low tidal areas. Any facilities operating in such an area must be protected by dikes or similar works to prevent washout.

4. Slope Failure

Steep or unstable slopes are obviously poor areas to locate any special waste facility. There must be a minimum of 100 metres between any unstable slopes and the facility. Where there is a question as

to whether a slope is subject to failure the services of a qualified geotechnical expert should be sought.

5. Protected Wildlife Areas

Special waste facilities may not be located in any of a number of protected wildlife areas such as designated parks or wildlife preserves or sanctuaries. The nearest office of the Ministry of Environment and Parks or the Wildlife Branch in Victoria should be contacted to identify boundaries of such areas.

D. Operational Requirements (S. 4 to 14)

As in the previous section the requirements discussed in this section apply to all facilities regardless of size or type. The only exceptions are found in the Regulation in Sections 2 and 51.

1. Plans (S. 4)

Any facility, which is new or to be modified, must have its plans approved by the director or a manager before construction or installation begins. The intention here is to ensure that the proposed works will be capable of managing the special waste safely. In most circumstances the approval is given when a permit is issued or amended. In cases where minor modifications are being proposed to existing facilities the owner of the facility will need to contact his nearest office of the Waste Management Branch to establish whether the changes necessitate formal approval.

2. Waste Information (S. 5)

Section 5 of the Regulation requires that any facility managing special waste must have full and complete information on the hazards and properties of the waste. Where a shipment is received without a manifest or if it does not match the description on the manifest the owner of the facility must contact the director or a manager before accepting delivery. He must also determine the quantity of a waste shipment if it is greater than 100 kilograms or litres. If there is more than a 5% discrepancy as compared to the manifest, the director or a manager must be contacted before the shipment is accepted.

3. Waste Record (S. 6)

Records of all special waste ever received at a facility must be kept on hand for inspection by a manager. This record must clearly show the amounts and location of wastes on hand at the facility and the disposition of wastes no longer at the facility. The record keeping system may be in the form of paper files or electronic data in a computer.

4. Weather Protection (S. 7)

The level of weather protection provided at any facility must be matched to the type of waste and the severity of the weather at the site. In general, this means that buildings, covers, heaters, etc. would be required for most special waste facilities. Weather protection may be unnecessary in facilities like lagoons and land farms where the waste is not going to be affected by the weather or where the management facility itself provides an adequate amount of protection.

5. Access Security (S. 8)

Special waste facilities must be designed to prevent the unauthorized access to the site by people and animals. The degree of protection will depend on the types of waste and the opportunities for access. The Regulation requires a barrier or a 24-hour surveillance system and a means of controlling access. Also, all important valves, electrical controls and similar devices must be protected if they are in areas subject to vandalism.

6. Fire Protection (S. 9)

The Regulation makes it clear that any facility which manages any ignitable or reactive special waste must be provided with an appropriate level of fire protection. These safety measures may be augmented by requirements of the provincial Fire Services Act or of municipal by-laws. The facility owner should check to ensure these requirements are also met.

7. Spill Protection (S. 10)

Spill containment systems for any special waste facility must be approved by a manager. The level of protection should match the degree of hazard posed by the waste. This requirement is not restricted to liquid wastes only. Facilities which manage fine powders, dusts and gases should also have spill protection provisions. The owner of a facility with a spill protection system must check for any leaks or malfunctions and immediately report these to the director or a manager. In addition the facility operator must keep a record of his inspections and any corrective action.

8. Contingency Plan (S. 11)

A contingency plan is a document which provides all relevant data necessary to make an initial sustained response to any type of spill or emergency

at a facility. A plan should contain detailed procedures for evacuation and shutdown, abatement measures, emergency equipment inventories and communication networks. The plan must be kept up to date and should be tested on a regular basis.

9. Emergency System Testing (S. 12)

A facility must have its various emergency systems tested at least once per year to ensure that all protective measures are working properly. Records of each test must be kept and if the facility manages more than 20 tonnes of waste per year the record of tests must be sent to the director or a manager within 90 days of the test. The intent of this regulation is to see that all equipment, plans and procedures designed to handle an emergency are able to provide an adequate level of protection. Any deficiencies identified during a test must be corrected as soon as possible.

10. Personnel Training (S. 13)

Every person who works at a special waste facility in an operational capacity must be trained not only in the basic responsibilities of his position but also in a full array of emergency and safety procedures before commencing work. This training must cover duties and responsibilities, proper use of protective clothing and equipment, knowledge of emergency response procedures, communications and alarm systems, spill abatement procedures and equipment, shutdown procedures and a good working knowledge of the special wastes managed at the facility. The quality of training must be matched to the level of hazard associated with the wastes being managed at the facility.

All operational employees must receive an annual review of their initial training. This is to ensure that any new procedures, equipment or responsibilities are not overlooked in the day to day operation of the facility.

Records must be kept of each employee's training history. This includes a record of all operational staff, the level of training received and the date of the last training session.

11. Closure (S. 14)

Every special waste facility must have an approved closure plan. The plan must state how and when a facility will be closed plus a description of the decontamination procedures to be used. The plan must also indicate the time needed to complete the closure and identify the types and amounts of waste residues which might be left after closure. This last point is important information for anyone interested in future development of the site.

Amendments to a closure plan must be submitted to the director or a manager, whenever there are any changes in a facility's design, operation or intended closure date.

A facility owner must notify a manager or the director at least 90 days in advance that a facility is to be closed. The facility should then be closed in accordance with the approved closure plan. Anyone not closing a facility in a proper manner could be subject to additional abatement orders or penalties under the Waste Management Act.

IX RECYCLE FACILITY REQUIREMENTS (S. 15)

Recycle facilities under the Special Waste Regulation have a relatively narrow interpretation. Recycle means "to wholly utilize a recycleable material" in a process which is not principally intended for waste management, or to package or offer a recycleable material for retail sale. To meet this definition the waste material must be completely used in the process or sold in its original form.This means that a facility which distills solvent from a paint waste for future sale is not a recycle facility because the waste is not "wholly utilized" or promptly repackaged for sale. Such an operation would be classed as a treatment facility. The key words in the definition of recycle are "to wholly utilize". There should not be a residual left over after the material has been processed.

A recycle facility would be a process like a smelter which is used to recover metals from plating wastes where the material is wholly utilized in the process. Similarly, an acid waste used in an industrial process would be recycled if it was "wholly utilized".

The definition of recycleable material also excludes materials that are burned or applied to land. Hence, burning used oil in a kiln or spreading waste organic phosphate on agricultural land are not recycling operations but rather are treatment or disposal.

The operational requirements for a recycle facility are relatively simple. There must be an automatic means of stopping the process if there is an upset and if liquid wastes are being transferred, dripless hose connections must be used and finally the materials used in the process must be compatible with the special waste.

X SHORT TERM STORAGE FACILITY REQUIREMENTS (S. 16-17)

Short term storage implies that a special waste is being kept in a safe place for a period of time, before it is recycled, treated, disposed or managed in some other manner. The regulation does not specify a pre-determined length of time before a waste must be removed from storage. This time period will be governed by the storage permit which may set a specific date for the facility or it will set a maximum amount of waste which could be kept in storage at any given time.

The definition of a short term storage facility does not restrict it to a building although this will often be necessary to meet the requirements of the Regulation.

A. Operational Requirements (S. 16)

Short term storage facilities have simple operational requirements which only apply to liquid wastes. The first requirement is that space be provided around tanks and containers for visual inspection. This normally would rule out underground tanks unless they were placed inside a vault which allowed the operator to check the tank for leaks.

A short term storage facility for liquids must have an impervious containment system with sufficient capacity to hold the larger of 110% of the largest container or 25% of the total liquid in storage. "Impervious" is defined as having a permeability not greater than 1×10^{-7} cm per second when subjected to a head of 0.305 metres of water.

If the facility is indoors, forced air ventilation must be provided so that 0.3 $m^3/min/m^2$ is exhausted at all times. Overflow protection must be put in place to minimize the chance of overfilling a tank and dripless hose connections must be used when transferring wastes. All materials which come in contact with the waste must be compatible with the waste being stored. Finally, the short term storage facility must be provided with automatic shutoff valves and similar devices to close off the flow of any special waste in the event of an emergency.

B. Performance Standards (S. 17)

The performance standards for short term storage simply require that any emissions or effluent from the facility must meet Ministry standards. For emissions this means meeting approved levels set for the specific facility by the director or a manager and for effluent discharges the criteria in Schedule 1 of the Regulation must be met. The criteria for effluent discharges are also found in Table 5 of this Guide.

TABLE 5: EFFLUENT CRITERIA FOR SPECIAL WASTE FACILITIES

Parameter	Maximum Concentration or Range (in mg/L unless otherwise specified)
Physical	
pH	6.5 to 8.5*
Temperature	32°C
Total suspended solid	20
Toxicity (Limit bioassay)	100% effluent
Inorganics	
Aluminum, dissolved	0.2
Ammonia, dissolved (expressed as nitrogen)	1.0
Antimony, dissolved	0.25
Arsenic, dissolved	0.1
Barium, dissolved	1.0
Boron, dissolved	10.0
Cadmium, dissolved	0.01
Chromium, dissolved (hexavalent)	0.05
Chromium, total	0.5
Cobalt, dissolved	0.1
Copper, dissolved	0.1
Cyanide (weak acid dissociable)	0.1
Fluoride, dissolved	2.5
Lead, dissolved	0.1
Manganese, dissolved	0.1
Mercury, total	0.001
Molybdenum, dissolved	0.5
Nickel, dissolved	0.5
Selenium, dissolved	0.05
Tin, dissolved	0.5
Zinc, dissolved	0.2
Organcis	
5 day Biochemical oxygen demand	20
Oil	10
Phenol	0.2
Polychlorinated biphenyls, total	0.005
Polychlorinated dibenzofurans, total	30 ng/L
Polychlorinated dibenzo-p-dioxins, total	30 ng/L
Total organic halogens	1.0

*pH units are the negative log of the hydrogen ion concentration

XI TREATMENT FACILITY REQUIREMENTS (S. 18-19)

A treatment facility is a place where the physical or chemical properties of a special waste are changed to reduce or eliminate one or more of its hazards. Treatment facilities can be located either at the point of generation or off site. In each case the requirements apply equally except for one significant exception. On site treatment facilities are exempt from the siting, operating and performance requirements of the Regulation if they are only used to reduce the volume of a special waste. This is an incentive to industry to minimize the volume of wastes which would otherwise be sent to a central treatment facility.

The following sections briefly discuss the operational requirements and the performance standard for treatment facilities.

A. Operational Requirements (S. 18)

The intent of these operational requirements is to ensure that special wastes processed at a treatment facility are not going to endanger the environment or human health. Mostly these are common sense requirements which any responsible facility operator would follow in order to make his workplace safe. Items like automatic shutoffs to control the process and the waste feed system would be standard in any similar industrial operation. Additional requirements may be applied to an operation in the permit issued by the director or a manager. A very significant safety measure is the requirement to have a treatment facility prove its effectiveness with a demonstration trial. The trial must be approved by the Ministry and it must be representative of the intended operation. In cases where the trial itself may be considered dangerous, the Ministry may ask the facility operator to first conduct the trial on a non-hazardous material. After there is sufficient evidence to show that the process is safe with such materials the trial could proceed with other special wastes. The results of any demonstration trial must be reported to the director or a manager and approval received before the facility commences operation.

B. Performance Standards (S. 19)

Any discharges of liquid effluent from a treatment facility must meet the criteria set in Schedule 1 of the Regulation. (See Table 5). Any effluent with contaminants above these levels would have to be further treated before being discharged to a sewer or the environment.

Similarly, any emissions to the atmosphere must meet approved emission specifications. These would normally be set by the permit or any other form of authorization issued to the facility operator.

Solid residues from a treatment facility may be recycled or treated at the same facility or otherwise managed at another facility. Residues may also be discharged to a secure landfill. If the operator presents the director with sufficient evidence to show that there would not be a significant risk to human health or the environment the director may authorize the disposal of treatment facility residues in an authorized landfill other than a secure landfill. At this time anyone wanting to dispose of a special waste residues at a municipal landfill would seek the director's approval by subjecting the material to a series of rigorous tests designed to demonstrate the long term stability of the residue. These tests are currently the subject of an evaluation and are not yet available for use. The Ministry has not formalized these tests in the Regulation so each residue would have to be tested on an individual basis. A treatment facility operator would be well advised to discuss the test requirements well before disposal was necessary.

XII INCINERATOR AND OTHER THERMAL FACILITY REQUIREMENTS (S. 20-22)

A thermal facility is a treatment facility where elevated temperatures are used to reduce or eliminate the hazards of a special waste. Combustion with oxygen in a controlled flame is called incineration. Common examples of incinerators are rotary kilns and furnaces. These units are designed to mix oxygen and a fuel in a controlled manner so that the heat output is maximized in the rapid oxidation reaction. Technologies such as plasma arc, infrared and inductive heating are examples of thermal facilities which are not incinerators. In these processes heat is usually generated without the use of a fuel. In each of these cases, intense heat causes a molecular breakdown of the waste.

This section describes the requirements for incinerators and other thermal facilities. As is the case with treatment facilities, there are no additional siting requirements specifically for thermal facilities. If such requirements are necessary they would be reflected in the permit or other form of authorization issued by the Ministry.

A. Operational Requirements (S. 20)

Before a new thermal facility can be constructed or installed a report with all relevant technical information must be submitted to the director or a manager. The report must include information about the manufacturer, the technology, the physical size and configuration, any fuel and waste feed systems, the air supply systems, automatic safety cutoff systems, exhaust gas pollution control systems, burner design, construction materials, and process control systems. Any other information which would help to describe the process should also be included to provide a complete picture of the facility.

The report must also contain a prediction of the maximum ground level concentration of any contaminants emitted to the atmosphere. This is normally done with a computerized dispersion model calculation which predicts the ground level concentrations for various atmospheric conditions. The dispersion model and the calculations must be approved by the Ministry.

1. Demonstration Trials

The next step in the approval process requires trial runs of the process to demonstrate the effectiveness of the facility. Although the trials must be approved by the Ministry beforehand it is not necessary that they be run in British Columbia. The results of trials in other jurisdictions may be accepted if the procedures meet the Ministry's requirements. Usually a trial would be run with the most difficult waste intended to be disposed at the facility. The Ministry will specify the principal organic hazardous constituents (POHCs) to be used as the basis for the trial. In cases where there may be an undue risk from the trial itself the Ministry would require that a nonhazardous surrogate material be used first before the special waste is tested.

The objective of the demonstration trial is to show that the facility is capable of destroying or removing all hazardous constituents from the waste and to further measure the concentrations of POHCs in any emissions, effluents or solid residues. The effectiveness of the process is measured by the "destruction removal efficiency" calculation shown below:

$$DRE = \frac{W_{in} - W_{out}}{W_{in}} X100\% \qquad \text{Eq. 1}$$

where:

DRE = destruction/removal efficiency in percent

W_{in} = the mass feed rate of POHCs in the waste feed

W_{out} = the mass emission rate of POHCs in the exhaust emissions

The demonstration trial must also identify any significant product of incomplete combustion (PICs) in any emissions, effluents or solid residues. PICs are compounds that are not normally part of the original waste. They are created during incomplete combustion from fragments of partially destroyed waste or fuel molecules. Incomplete combustion most often occurs when incineration temperatures are low or if the waste has not been exposed to the heat for enough time. PICs may be as hazardous or more hazardous than the original waste. The director or a manager may impose concentration limits on any PICs in the permit.

XII INCINERATOR AND OTHER THERMAL FACILITY REQUIREMENTS (S. 20-22)

Any effluent from the facility must be analyzed to identify the concentrations of Schedule 1 parameters (see Table 5) to insure that it would be acceptable for discharge. If it contains high concentrations of these parameters further treatment would be required. Emissions must be analyzed for the parameters listed in Schedule 2 of the Regulation (see Table 6 in this Guide).

2. Combustion Efficiency and Operating Conditions

If combustion is used in the process, the demonstration trial must also show that the incineration of waste is complete and efficient. Combustion efficiency is calculated in the following equation:

$$CE = \frac{CO_2}{CO_2 + CO} \times 100\% \qquad \text{Eq. 2}$$

Atmospheric conditions and ambient concentrations of contaminants also need to be measured during a demonstration trial. This involves taking readings of temperatures, barometric pressure, wind direction and speed, concentrations of POHCs, PICs and any other parameters required by the Ministry. This is necessary to ensure that predicted dispersion models can be verified.

where:

CE = the combustion efficiency in percent
CO_2 = the concentration of carbon dioxide in the exhaust gases
CO = the concentration of carbon monoxide in exhaust gases

TABLE 6: EMISSION CRITERIA FOR SPECIAL WASTE THERMALTREATMENT FACILITIES

Parameters	Concentration (mg/m^3)
Particulate matter	50
Hydrogen chloride (HCl)	70
Sulphur dioxide (SO_2)	250
Nitrogen dioxide (NO_2)	300
Hydrogen fluoride (HF)	5
Carbon monoxide	475
Phosphorous pentoxide (P_2O_5)	10
Total hydrocarbons as methane (THC)	45
Trace metals*:	
Class II (Pb, Sb, Cu, Mn, V, Zn)	5
Class II (As, Cr, Co, Ni, Se, Te)	1
Class III (Tl, Cd, Hg)	0.2
Opacity	10%

NOTE: Concentrations are corrected to 12% carbon dioxide (CO_2) and standard conditions of 20°C, 760 mm Hg and dry basis.

*The concentrations prescribed apply to each individual metal.

XII INCINERATOR AND OTHER THERMAL FACILITY REQUIREMENTS (S. 20-22)

In an efficient incineration process, oxygen combines with carbon in the waste to form carbon dioxide. If the reaction is hampered by insufficient oxygen or poor mixing of the gases, carbon monoxide is formed. The combustion efficiency is a simple check on the "completeness" of the incineration process. If any incinerator produces CO_2 from sources other than the combustion process such as in a lime kiln, it is not required to have the combustion efficiency calculated. This is because the CO_2 produced from other sources in the process cannot be identified separately from that produced by incineration. Hence, the CO_2 concentration cannot be determined for the waste combustion process alone. During each demonstration trial the temperature of the reaction zone, the residence time of the waste in that zone and the concentration of oxygen in the exhaust gases must be measured during the periods used to calculate the DRE. These parameters are important for setting permit operating conditions.

B. Safety Requirements (S. 20(4) to (6))

Like other facilities, incinerators and thermal treatment units must have some automatic means of shutting down the operation if an upset were to occur. The automatic cutoff system must be tested weekly and any malfunction of this system must be reported to the director within 24 hours.

The facility and all associated equipment must be inspected daily for leaks or other malfunctions. Leaks and fugitive emissions should be controlled by keeping the works well maintained and the exhaust system under a negative pressure.

C. Monitoring Requirements (S. 20(8) to (11))

The permit will require that the facility be operated within a specific set of conditions. The Regulation specifies required monitoring for these conditions. This includes the continuous measurement of the combustion zone temperature, the waste feed rate, the exhaust gas flow rate, and the concentrations of CO_2, CO, and O_2 in the exhaust gas.

The permit will also specify an emission and ambient monitoring program to be carried out as well. The results of the emission monitoring program must be sent to the director or a manager 60 days after a test was conducted. Results of ambient testing must be sent in within 60 days of the end of each calendar quarter.

D. Performance Requirements (S. 21)

In British Columbia, special waste incinerators and other thermal facilities must be able to meet the following performance and emission criteria:

Liquid effluents from thermal facilities must meet the effluent criteria in Schedule 1 (Table 5 in this Guide) before they can be discharge to the environment. This may mean undergoing additional treatment either on site or at another facility.

Solid residues like ash and scrubber water sludge may be recycled or managed at another special waste facility or discharged to an authorized landfill if it can be shown that it no longer is a hazard to human health or the environment.

XII INCINERATOR AND OTHER THERMAL FACILITY REQUIREMENTS (S. 20-22)

Table 7: Destruction Removal Efficiency, Combustion Efficiency and Emission Criteria for Incinerators and Other Thermal Treatment Facilities

	Parameter		Criteria
1.	DRE criteria for:	POHCs	99.99%
		PCBs	99.9999%
		PCDFs	99.9999%
		PCDDs	99.9999%
2.	CE criteria (incinerators only)		99.9%
3.	Emission criteria		See Schedule 2 of the Regulation (Table 6 in this Guide))

XIII MOBILE FACILITY REQUIREMENTS (S. 22 to 24)

Mobile facilities are most commonly either treatment or incineration units. Some are mounted on a truck or trailer and may be in operation for a short time before moving on to another location. Some mobile facilities take considerable time and effort to set up or take down and might be more appropriately considered transportable. However, if the unit operates at one location for less than 1800 hours in a 3 year period and processes less than 1000 tonnes in that same period the facility is called "mobile". Under the Regulation, mobile facilities are given special consideration.

One of the primary regulatory differences for mobile facilities is that the Minister may specify less restrictive siting standards. The justification for this is that the transitory nature of the facility may safely allow operation of the facility under less rigorous requirements. For example, the operation could be scheduled when flood risks are not a factor, thus, allowing operation within the 100 year flood zone for a short time. However two operational requirements have been added for mobile facilities. First, all hoses, pipes and containers used for any special waste or hazardous reagent must be drained before the unit is transported and secondly the emergency system testing must be done annually and repeated each time the unit is moved to a new location.

The performance standards for mobile facilities are the same as those for each individual type of facility. Thus a mobile incinerator must meet the same performance standards as a stationary incinerator and a mobile treatment facility would have to meet the treatment facility requirements.

XIV PILES, SURFACE IMPOUNDMENTS AND LAND TREATMENT (S. 28 to 32)

Piles, surface impoundments and land treatment works are types of special waste facilities where the waste is stored or treated on or in the ground. In these facilities the ground acts to provide extra containment or is a medium for biological treatment. The technical differences between these three types of facilities can be found in the definitions found in Section 1. of the Regulation.

A waste pile is a facility for storing or treating solid or "nonflowing" wastes. The main concern from an environmental point of view is the possibility of precipitation mixing with the waste to form a leachate. A leachate could eventually move through the waste to contaminate the soil or underlying groundwater.

In all three of these types of facilities air pollution from volatile liquids or blowing solids may also be produced. Hence, any permit issued under such circumstances would include provisions for protection of the atmosphere.

A surface impoundment is used to temporarily store either a liquid or a solid but in either case it must be in a man-made excavation or dyked area constructed of earthen materials. Surface impoundments must also be designed and operated to prevent or at least minimize the generation of leachate.

A land treatment facility implies the spreading of an organic waste on land so that air, sunlight and microbial organism are freely available to biological decompose the waste. Some inorganic wastes may be contained in the waste but the principal target of the treatment is the organic fraction.

In most cases the waste from these three types of facilities would normally be removed for treatment or disposal at another location. Therefore these facilities (and most special waste facilities) must be managed with the long term view for a final cleanup and site remediation.

A. Siting Requirements (S. 28)

Section 28 of the Regulation lists all of the additional siting requirements which must be met by any waste pile, surface impoundment or land treatment facility. These requirements are mainly for the protection of groundwater and surface water. Hence, building such facilities in or near wetlands is unacceptable under the Regulation.

Groundwater is protected by requirements that waste piles and surface impoundments must have at least 3 metres of very low permeability soil between the bottom of the facility and the watertable. (For land treatment this distance must be at least 1 metre). Similarly, there must be at least 5 metres of such soil between the bottom of the facility and any underlying fractured or permeable bedrock. These facilities are also prevented from being in the recharge area of any high capacity wells or of a significant number of low capacity wells.

The Regulation also prohibits these facilities from being located within 150 metres of any surface water or within the watershed of a designated community water supply.

B. Operational Requirements (S. 29)

Waste piles, surface impoundments and land treatment facilities are not passive management works which can accept wastes over a long period of time without some care and attention to the way the various components of the system are functioning. These facilities need almost constant surveillance to ensure proper operation. The operating requirements in the Regulation place a responsibility on the owner of the facility to see that all parts of the works are functioning as they were intended.

The operating requirements include:

- inspecting any required liner on a regular basis and taking corrective action (ie. repairs) immediately
- monitoring groundwater and leak detection systems in an approved manner
- maintaining leachate collection and runoff control facilities,and
- reporting any leaks or monitoring data to the director.

Section 29 of the Regulation should be consulted for a full appreciation of the operating requirements for waste piles, surface impoundments and land treatment facilities.

XIV PILES, SURFACE IMPOUNDMENTS AND LAND TREATMENT (S. 28 to 32)

C. Performance Standards for Waste Piles (S. 30)

The Regulation is clear that a waste pile must be designed and operated to meet certain specific requirements. For instance a pile may not be used to store wastes containing liquids, liquids in containers or any ignitable or reactive wastes. A containment system must be used to hold the waste or any leachate generated at the site. A liner may be required depending on the nature of the waste. Furthermore, a leak detection system and a leachate collection system must meet the approval of the director or a manager. A cover or an equivalent means of controlling dust may also be required.

A waste pile would be considered out of compliance with the Regulation if groundwater monitoring showed a significant increase in the concentration of any chemical parameters associated with the waste. The method for determining statistical differences in upstream and downstream concentrations must be approved by the director or a manager.

The final closure of a waste pile must be anticipated during the operating life of the facility. Thus, before it can be closed there must be an approved written plan to follow. At the time of closure all stored special waste would be removed and the underlying soil cleaned up to an approved depth.

D. Performance Standard for Surface Impoundments (S. 31)

The performance standards for surface impoundments reflect the fact that the storage or treatment of liquid special waste in a facility on the ground requires extra careful attention. Ignitable and reactive wastes are considered unsuitable for surface impoundments. A minimum freeboard of 0.5 metres must be maintained at all times and a 20 foot fenced inner buffer strip must be provided. The impoundment must have an approved liner which could be either 0.5 metres of clay or a 1 mm synthetic liner. The liner must be compatible with the chemical properties of the waste at the facility and of sufficient strength to prevent damage or leakage caused by stress.

The requirements for monitoring, a leak detection system, effluent discharge criteria, wind dispersal and closure are similar to those for waste piles and Section 31 of the Regulation should be consulted for further details.

E. Performance Standards for Land Treatment Facilities (S. 32)

The Regulation has similar requirements for land treatment facilities as those already discussed in the two previous sections. There are no predetermined unsuitable wastes for land treatment facilities. This is because of the high variability of climate and soil conditions which have a very direct bearing on the types of waste which may be suitable for land treatment. In this case the director or a manager would restrict the type of wastes that could be treated at each facility through the permit requirements. The performance standards for any liners, leak detection works, non-compliance conditions, effluent discharge criteria, wind dispersion and closure are all found in Section 32 of the Regulation.

XV SECURE LANDFILL REQUIREMENTS (S. 25 to 27)

A secure landfill is often the final disposal option for any wastes which can not be further reduced or decontaminated. It is a facility designed, constructed and operated to keep wastes confined for an indefinite period of time with little likelihood of future removal. For this reason, secure landfills have some of the most stringent requirements under the Regulation.

A. Siting Requirements (S. 25)

In addition to all of the siting requirements for other facilities secure landfills must meet very stringent conditions to comply with the regulations. A secure landfill may not be located in a wetland or in an area adjacent to a wetland. A wetland is any land like a tidal flat, a marsh or a bog which is frequently inundated by water.

Zones where the potential for earthquakes is high are also ruled out. The criteria used for earthquake potential is a probability of 1 in 100 for a ground acceleration of greater than 4% of gravity. The federal Department of Energy, Mines and Resources should be consulted for details on these calculations.

Secure landfills are prohibited in areas where the water table is within 3 metres of the bottom of the landfill liner and there must be relatively "tight" soil between the landfill and the watertable. The criteria for "tight" soil in a landfill situation is a permeability of 1×10^{-6} cm/s (when subjected to a head of water of 0.305 metres of water). There are a number of other restrictions related to groundwater protection which may be found in the the Regulation. Figure 8 illustrates these restrictions in detail.

A secure landfill is also required to be in an area where precipitation falling on the site after the site has been closed will not lead to the generation of a leachate. This restriction is spelled out by the two equations given below:

$P_t < E_t + W_s$ (on a monthly basis) Eq. 3

$P_t < E_t$ (on an annual basis) Eq. 4

where:

P_t = the measured precipitation falling on the site,

E_t = the maximum amount of water loss from the closed landfill by evaporation or transpiration, and

W_s = the maximum amount of soil water holding capacity of the final cover material.

Thus, before a secure landfill can be located in a given area there must be data on the three variables in these equations. If such data does not exist for the site it must be obtained by taking measurements at the proposed site or calculated from data collected in areas with similar weather conditions.

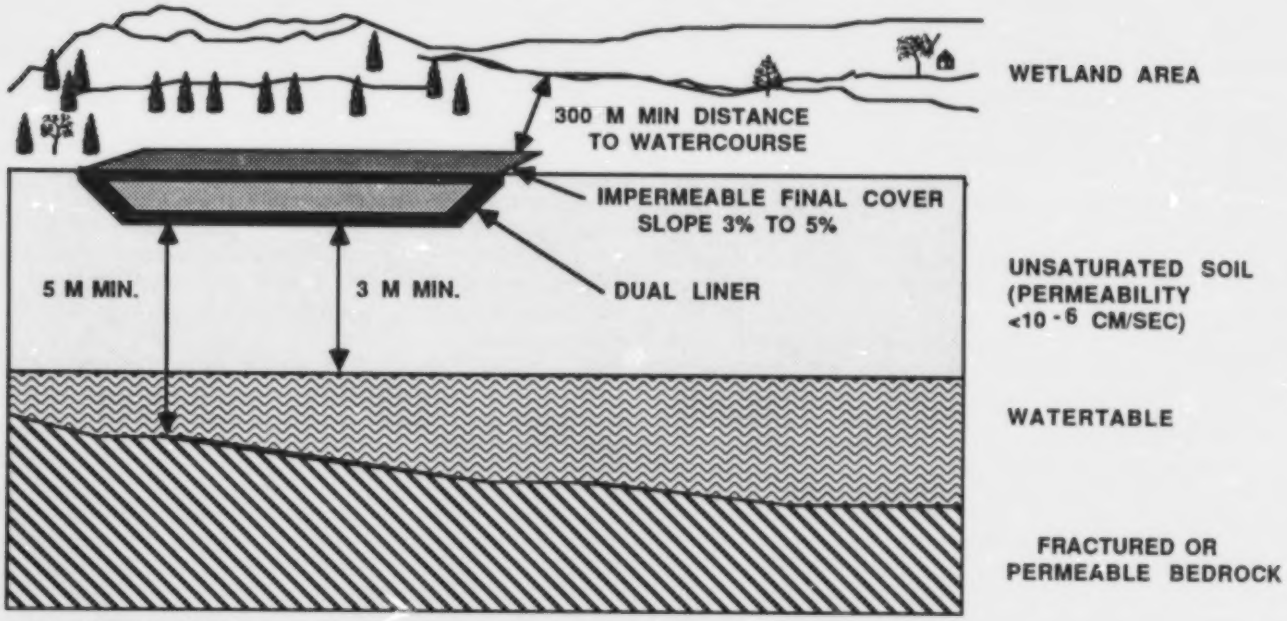
A secure landfill must also have a buffer to separate it from other land uses in the area. The Regulation does not specify the size of the buffer but states that it must be approved. The implication being that the size of the buffer will depend on the local situation. For instance if a secure landfill is proposed near a sensitive salmon spawning area the buffers would be greater than if it was located away from any environmentally sensitive areas. The buffer area must be part of the landfill site. It must be part of property controlled or owned by the facility operator or the government.

B. Operational Requirements (S. 26)

Secure landfills have the most restrictive operating requirements of any facilities covered by the Regulation. This is due to the designed permanence of the operation. Although there may be some designs of secure landfills where provisions can be made to recover wastes in the future, it is considered unlikely that a secure landfill would be exhumed at any point in the future. Thus the operational requirements must ensure that the facility will not fail to contain the waste. Section 26 of the Regulation should be checked for the full list of requirements however the general intent of these requirements is discussed in this section.

During the construction and operation of a secure landfill the owner must inspect the works for any leaks or damage. Inspections are also required after any catastrophic events like severe storms, earthquakes or forest fires. Any damage to the works must be repaired immediately.

FIGURE 8. SECURE LANDFILL REQUIREMENTS



PROHIBITED AREAS:

- -AREAS WITHIN 100 YEAR FLOODPLAINS (UNLESS PROTECTED)
- -AREAS WITHIN 100 M OF A HOLOCENE FAULT
- -AREAS PRONE TO TSUNAMIS
- -AREAS PRONE TO SLOPE FAILURE
- -DESIGNATED WILDLIFE AREAS
- -WETLANDS AND LAND ADJACENT TO WETLANDS
- -SESMIC ACCELERATION > 4% OF GRAVITY (ANNUAL PROBABILITY 1:100)
- -RECHARGE AREAS FOR HIGH CAPACITY WELLS
- -RECHARGE AREAS FOR WELLS SUPPLYING FISH HATCHERIES AND OTHER DOMESTIC AND INDUSTRIAL USES
- - DESIGNATED COMMUNITY WATERSHEDS

MUST HAVE:

- -MONTHLY PRECIPITATION < (EVAPORATION + SOIL STORAGE CAPACITY)
- -ANNUAL PRECIPITAION < EVAPORATION
- -A BUFFER ZONE
- -DUAL LINERS (EACH 0.5M OF CLAY OR 1MM THICK SYNTHETIC)
- -A LEACHATE DETECTION AND COLLECTION SYSTEM
- -PORTABLE COVER (OR EQUIVALENT) OVER WORKING SURFACE
- -A CLOSURE PLAN
- -FINAL COVER OF 0.75M SOIL, 0.5M CLAY OR 1MM SYNTHETIC, 0.5M SOIL AND SHALLOW ROOTING VEGETATION

XV SECURE LANDFILL REQUIREMENTS (S. 25 to 27)

A secure landfill must be monitored to ensure that there has been no breech of the liner system. Provisions for this monitoring must be made well before any waste is disposed at the site and it must continue after the facility has been closed. In addition to the monitoring requirements in the Regulation the permit may also include additional requirements which are assigned after a site assessment.

The active operating area of a secure landfill must be covered by a portable structure or some other system designed to keep out excess precipitation and prevent leachate generation. The purpose of this is to keep the material in the secure landfill dry as much as possible while waste is being placed into each operating cell. This system must be kept in place until the final cover of the secure landfill is put in place on each cell.

Finally, a three dimensional map or similar record keeping system must be used to record the wastes being put into each cell of the secure landfill. This will assist in locating wastes if at any time in the future there is a need to locate a particular waste in the landfill.

C. Performance Standards (S. 27)

For many wastes and waste residues a secure landfill is the final resting place after passing through a series of other management facilities. A secure landfill needs to be designed and operated so that there is next to zero possibility that any waste contaminants would naturally leave the site. The containment must be complete. The Regulation specifies a secure landfill design with multiple levels of protection as shown in Figure 8.

Certain wastes are prohibited from being disposed in a secure landfill. The list of these prohibited wastes is found in Table 8. The principal concern here is that these wastes are better handled at other facilities and would be detrimental to the operation and integrity of a secure landfill or long term storage facility.

The Regulation requires approved systems for leachate prevention,detection and control. A secure landfill would be out of compliance with the Regulation if there was a significant difference in the groundwater based on upstream and downstream monitoring at the site as determined by a statistical method approved by the Ministry.

Surface water at the secure landfill and any other liquid effluent at the site must be managed so that it does not affect the secure landfill. If such liquids are to be discharged to the environment they must meet the criteria in Schedule 1 of the Regulation (see Table 5 of this Guide).

A secure landfill's final closure must be planned during the initial design phase, well before any waste actually is disposed. The Regulation specifies a final cover with minimum porosity, grade and covering vegetation. The post-closure period of the facility must be detailed in a plan approved by the Ministry. The post-closure plan would indicate how all parts of the facility will be monitored and operated after closure when the facility is turned over to the Crown.

TABLE 8: WASTE PROHIBITED FROM DISPOSAL IN A SECURE LANDFILL OR A LONG TERM STORAGE FACILITY

1. Liquids.

2. Waste materials which contain free liquids.

3. Containers with:
   (a) liquids, or
   (b) waste material which contain free liquids.

4. Empty waste containers unless they are crushed, shredded or similarly reduced in volume to the maximum practical extent.

5. Ignitable wastes.

6. Reactive wastes.

7. Wastes which contain greater than 1% (by mass) of total organic carbon excluding:
   (a) any organic carbon naturally contained in any soil, and
   (b) any organic carbon occurring in a substance which is not a special waste.

8. Wastes which contain halogenated organic compounds in total concentrations greater than or equal to 1 000 mg/kg.

9. Wastes which when subjected to the Modified Leachate Extraction Procedure referenced in Part 2 of Schedule 4 produces an extract which contains one or more contaminants in Column 1 of Table 1 of Schedule 4 in concentrations equal to or greater than the concentration specified for each contaminant in Column II of the Table.

10. Radioactive wastes.

XVI LONG TERM STORAGE FACILITIES (S. 33 to 35)

Over the years people have come up with many designs for systems which would contain wastes for a very long time. These designs have been as simple as using abandoned underground salt mines and as novel as using deep sea-bed burial. The Regulation has made provision for at least one alternative design for a "final" disposal option in the requirements for a long term storage facility. The concept is that a permanent structure could be constructed either above or below ground level dedicated solely to waste disposal, much in the same way that the Egyptians designed pyramids to entomb their dead. Long term storage facilities could take the form of a concrete monolith, a fortified bunker or any other similar structure dedicated to waste disposal.

Long term storage facilities have the advantage that the environment around the waste in storage can be controlled and modified if necessary. In addition, visual inspections and maintenance can be carried out as necessary. Also, since such a facility is always visible there is less of a tendency to neglect any aspects of the waste already disposed.

The requirements for this facility are not much different than those for a secure landfill and the overall objective of total long term containment is the same. Because a long term storage facility can be designed to control many of the natural forces which would otherwise act on wastes in a secure landfill the siting requirements for long term storage facilities are less restrictive than those for a secure landfill. Requirements for earthquake protection, groundwater control, precipitation and surface water control can be designed into a long term facility so site restrictions have been relaxed in these areas.

The performance standards for a long term storage facility are similar to a secure landfill except that a single rather than a dual liner system would normally be adequate.

XVII PROHIBITED MANAGEMENT PRACTICES (S. 36 to 39)

The Special Waste Regulation specifically prohibits the following:

- the mixing of special waste with water, rain water or other materials to evade to intent of the Regulation,
- the injection of special waste into underground rock or soil formations,
- the operation of any special waste facility on a fresh waterbody; however, this does not prevent the transportation of special waste on such waters,
- the discharge of any special waste into any municipal landfill or sewer system unless it is expressly authorized by a permit, approval, regulation or a waste management plan.

XVIII SPECIFIC SPECIAL WASTES

The Special Waste Regulation has separate requirements for three specific waste types - asbestos, oil and pesticides. These wastes are very common and make up a large percentage of the total special waste inventory. These requirements force these wastes to be managed in a safe manner without imposing an excessive administrative burden. If the specific requirements cannot be met these wastes would have to be managed as any other special waste.

A. Waste Asbestos (S. 40)

The Regulation defines "waste asbestos" as a waste containing more than 1% of friable asbestos fibres. The key word here is friable. Asbestos which is tightly bound within a solid matrix so that it is not easily crumbled by the hands is not a special waste. The Regulation is not directed at such asbestos materials as hardboard, brake linings or woven cloth.

The predominant hazard of this waste occurs when asbestos fibres are released to the atmosphere. Inhalation of asbestos fibres is the primary concern. Hence, the Regulation is designed to eliminate this hazard during transport and disposal.

Asbestos which is a special waste may be disposed at any authorized landfill provided each of the following conditions is met:

- the asbestos may not be mixed with any other special waste,
- the asbestos must be saturated with water and put into a non-leaking drum or if it is dry the asbestos must be placed within a 6 mil plastic bag which is sealed within a non-reusable drum or a second 6 mil plastic bag,
- at the landfill, the asbestos must be buried immediately with 0.5 metres of cover material, and
- the disposal must be approved by the landfill operator and the Regional Waste Manager.

B. Waste Oil (S. 41)

Oil is a special waste if it is a refined petroleum product which has become unsuitable for its original purpose due to the presence of impurities or a loss of its original properties. Diesel fuel, kerosene, home heating oil, cutting oil, hydraulic oil and automotive lubricating oil would all be considered special wastes if they were no longer used as original products. Typically, waste oil has been poured down sewers, burned as a fuel, spread on roads as a dust suppressant, or recycled. There is mounting evidence that the contaminants in used oil are potentially dangerous to human health and the environment and it must therefore be closely regulated. The most frequently discussed contaminants include flammable solvents, heavy metals and halogenated organics like PCBs, all of which are added to the oil through manufacturing, use or improper waste handling.

The Regulation authorizes the use of waste oil in the manufacture of pavement, in road construction and repair and as a dust suppressant provided it meets the specifications shown in Table 9. Furthermore, waste oil used for road construction, repair or dust suppression must not be applied within 25 metres of any surface water or water well and the application rate must not cause a visible runoff of oil. These requirements prevent the use of highly contaminated or adulterated oil while the Ministry studies the impact of normal used oil on the environment. It is felt that more conclusive evidence of environmental impairment from road oiling is required before this practice can be banned outright.

Whereas it may be argued that in road oiling the contaminants are bound within the top 1 cm of the road surface and hence not affecting the environment directly, the incineration of waste oil is considered to be more serious. Through incineration contaminants are released directly to the atmosphere and can be spread over a large area. Hence the specifications for the incineration of waste oil, shown in Table 10, are very stringent. The criteria are so restrictive that in most cases the waste oil will need to be re-refined before it could be incinerated as a fuel.

TABLE 9: WASTE OIL SPECIFICATIONS FOR MANUFACTURE OR ROAD APPLICATIONS

Constituent/Property	Allowable Level (Levels are maximums in mg/L unless otherwise indicated)
flash point	60°C minimum
total arsenic	20
total cadmium	3.0
total organic halogens (as Cl)	2 000
total chromium	10
total lead	1 000
total polychlorinated biphenyls	5.0
total zinc	1 000

TABLE 10: WASTE OIL SPECIFICATIONS FOR USE AS FUEL

Constituent/Property	Allowable Level (Levels are maximums in mg/L unless otherwise indicated)
flash point	43°C minimum
total arsenic	5.0
total cadmium	2.0
total organic halogen (as Cl)	1 500
total chromium	10
total lead	50
total polychlorinated biphenyls	3.0
total zinc	500

C. Waste Pesticides and Pesticide Containers (S. 42)

Pesticides are widely used products in industry and the home. The Regulation defines a pest control product as any of the thousands of products registered under the federal Pest Control Products Act and provides for their disposal in a manner which is safe but yet does not require an undue amount of administrative supervision. Any waste pesticide which is not managed in the manner set out in Section 42 of the Regulation must be handled in accordance with requirements applicable to other special waste. Although the Regulation does not apply to wastes in quantities less than 5 litres or 5 kilograms, it is wise to follow the procedures in this section for household quantities as well. The Regulation also states that any pesticide container that is labelled "DOMESTIC" is not a special waste if it is emptied and rinsed in the ways discussed in this section.

Before beginning the discussion on disposal, a few terms need to be clarified. These terms are:

- **appropriate solvent** - means any solvent (like water) which is able to dissolve the pesticide; it should be compatible with the carrier fluids in the pesticide and not be a special waste itself.

- **empty** - as simple as it may sound the Regulation specifies that empty means to do one of the following:

  - drain a liquid container into a mixing tank for not less than 30 seconds

  - shake residues from an inner liner into a mixing tank, or

  - use all of the contents of a pressurized container without puncturing it.

- **rinse**- means to do all of the following in order:

  - fill the container with not less than 20% of its volume of an appropriate solvent,

  - close and shake the container so that all inside surfaces are contacted with the solvent,and

  - empty the container as defined above.

- **pressure rinse** - means to use a pressurized spray of appropriate solvent for 30 seconds to rinse the interior of the container.

Before a pesticide container may be disposed under the provisions of Section 42 of the Regulation, different rinsing methods must be followed depending on the type of container. For instance, pressurized containers like spray cans and containers which are labelled "DOMESTIC" do not need to be rinsed. Paper and plastic bags must be rinsed with an appropriate solvent while glass bottles must be rinsed three times. Non pressurized plastic or metal containers must be either rinsed three times or pressure rinsed. Any container not described in the Regulation must be rinsed by a method approved by the Ministry. Wherever possible, the rinse solution should be used in the mixing of the pesticide. If this cannot be done the rinse solution may be disposed on the land where the pesticide was used provided it is placed on flat ground, more than 200 metres from any surface water or a well and the soil in the area must not be porous like sand or gravel.

After a container is emptied and rinsed it may be disposed in an approved landfill. If a landfill is not readily available the next best option is to bury the container under at least 0.5 metres of soil on land owned or leased by the person with the container. In this case the disposal must also be on flat ground, more than 200 metres from any surface water or well and the soil must not be porous like sand or gravel.

XIX PERMITS AND OTHER FORMS OF AUTHORIZATION

The discharge of any waste to the environment is prohibited unless it is authorized under the Waste Management Act or its regulations. Section 3.2 of the Waste Management Act further requires any facility used to manage special waste, in any way, to have similar authorization under the Act. Such authorizations include permits, orders, approvals, specific regulations or a waste management plan. A short list of the various forms of authorization and a brief explanation of each is given below:

- **Regulations** -these are requirements issued by the Lieutenant Governor-in-Council usually for specific types of waste or for administrative procedures which affect large sectors of the population.
- **Permits** - an authorization issued by the director or a manager for a specific type and quantity of waste at a specific place. Permits may be issued for discharges of waste or storage of special waste.
- **Approvals** - a short term authorization similar to a permit but valid for 12 months or less. Usually used for testing of equipment or short duration discharges.
- **Waste Management Plans** - an authorization issued by the Minister to a municipality for wastes managed by that municipality.
- **Order** - a requirement issued by the Minister (ie. spill prevention orders) or a manager (ie. pollution abatement orders) to take action which is beyond the terms of any other form of authorization.
- **Transport Licence** - permission to transport special waste given by the director

A. Applications for Permits

Permits and other forms of authorization for special waste management are obtained by the same administrative procedures as those for non-special wastes. Permits, approvals and orders normally contain terms and conditions applicable to each individual case. These are additional to those requirements in the Regulation. For instance, permits will restrict the types and quantities of special waste which can be managed at any individual facility. Also, monitoring and reporting requirements would be specified in the permit. Hence, where the Regulation covers the general situation the permit, approval or order applies to the individual case.

Permits for special waste facilities are obtained by the same process as those for other wastes. The steps for obtaining a permit are:

- Obtain a copy of the appropriate application forms from the nearest office of the Waste Management Program (see Appendix A for office locations).
- Complete the forms and remember to sign and date them
- Post one copy of the completed form at a conspicuous place at the site.
- Within 15 days of signing the application, send two copies of the completed form and a site plan to the Waste Manager for the Ministry region in which the discharge is located.
- Carry out any instructions given by the Ministry for publication of the application or public notification.
- Provide any additional information as required by the Ministry.

The following sections describe the procedures followed in any permit application.

B. Publication and Notification

All applications for permits must be posted at the proposed waste management site and two copies must be sent to the applicable Regional Waste Program Manager. When the completed application is first received by the Waste Management Program, it is checked for completeness and is automatically published in the British Columbia Gazette. A decision is made on where further notice should be given to the public.

FIGURE 9: AUTHORIZATION REQUIRED FOR SPECIAL WASTE MANAGEMENT

AUTHORIZATION REQUIRED FOR FACILITIES (ACT S. 3.2)	All Special Waste Facilities Must Be Operated In Accordance With: • a permit • an approval • an order, or • a waste management plan and • the Waste Management Act, and • the Special Waste Regulation
EXEMPTIONS (REG S. 2)	The following operations are exempt from Section 3.2 of the Act and most of the Regulations: • unaltered existing facilities (until January 1, 1990) • facilities handling less than 5 litres or 5 kilograms • on site treatment for volume reduction only • on site recycle facilities if the material is part of the process feed or the process product • off site recycle facilities if the material is less than 5% of the process feed • mine tailings and waste rock

SPECIAL WASTE GENERATORS	• existing generators must register by July 1, 1988 • new generators must register within 30 days of producing special waste • must use Generator Registration Number if one is issued

SPECIAL WASTE STORAGE	• existing storage must register by July 1, 1988 • a permit is required if the stored quantity is greater than the amounts shown in Column III of Schedule 6 of the Special Waste Regulation • existing facilities must apply for a permit when ordered to do so • new facilities must obtain a permit before commencing operation

TRANSPORTERS (CARRIERS)	• must have a licence to transport special waste by road (Note: Transport licences are not required: - for transport solely on the generator's property, or - by generators carrying their own waste in quantities less than the generator registration quantity)

		COMPLIANCE DATE FOR:	
		EXISTING	NEW
FACILITIES	On Site	• siting requirements - must be met on a date set by the Minister • operational and performance requirements - January 1, 1990 or on a date set by the Minister	• April 1, 1988
	Off Site	• siting, operational and performance requirements - Jan. 1, 1990 or on a date set by the Minister	• April 1, 1988

In virtually all cases the application is also published in a local newspaper or displayed at a Canada Post Office. In some cases it may be required that the application be served directly to persons who may be adversely affected by the discharge, emission or the storage of the waste. It is also the policy of the Waste Management Program to refer applications to other government agencies for review.

C. Assessment

Each permit application receives a technical review by a staff member of the Waste Management Program before a formal decision is made by the director or a manager. This review assesses the ability of the proposed management system to meet the requirements of the Act and the regulations. Usually the review requires a detailed site inspection and is completed after all information and comments have been received from the public and other government agencies. The applicant may be asked to supply more information if considered necessary for the assessment. Sometimes delays at the assessment stage can be avoided if the applicant meets with Waste Management staff prior to submitting his application to learn what additional information might be required.

As a general rule Waste Management Program files are open to the public and persons with a valid interest in a specific file may view the information on that file.

The assessment process for permits can take anywhere from 3 or 4 months to a year or more, depending on the availability of information and the complexity of the application. Approvals and order are generally processed much faster because of the temporary nature of these forms of authorization.

D. Concerned Persons

Anyone who feels that the authorization of a storage facility or the discharge of a waste would adversely affect him may, within 30 days of the last date of posting or publication of an application, notify the manager of his concerns. He must state in writing how he is or would be affected. Any information which may have bearing on the decision of the manager should be brought to his attention at this time. It should be clear however that a manager's decision on a waste management permit application must be in the context of human health and the environment. Issues such as land use, job creation, economic conditions, etc. are not part of the environmental assessment and and are more appropriately addressed in other forums of debate and appeal such as at municipal council hearings, before the ombudsman, in the courts or the legislature.

The manager may require the applicant to meet with any concerned person to explain and clarify the intent of the application. Such meetings may be very small and informal or more formal if there are a large number of concerned persons.

E. Notice of a Manager's Decision

Upon reaching a decision on an application the manager will, in accordance with the Waste Management Regulation, notify the applicant and anyone recognized as a concerned person. This notification of the manager's decision may be either by mail or a notice published in a local newspaper.

F. The Appeal Process

Anyone dissatisfied with a manager's decision may appeal to the Waste Management Program Director. A further appeal to the Environmental Appeal Board is available on any decision made by the director. An appeal is started by sending written notice of "intent to appeal" to the manager. This notice of appeal must be sent within 21 days of the notice of the manager's decision. Appeals to the Environmental Appeal Board must also be made within 21 days of the notice of the director's decision accompanied with a $25.00 fee. The director or the chairman of the Environmental Appeal Board may extend the appeal period.

When considering an appeal the director or the appeal board may hold a hearing, confirm or vary the decision being appealed or make a new decision. If a hearing is held , the director or the appeal board will notify the parties concerned of the date, time and location.

All hearings before the Environmental Appeal Board are open to the public and a transcript is made of all the proceedings and testimony. When the decision is reached on an appeal, written reasons are given and notice of the decision is sent to those involved in the appeal. The Environment Management Act's Environmental Appeal Board Procedure Regulation describes the steps to be taken in appeals of decisions made by the director.

An appeal does not suspend or delay a decision under appeal unless the person or board hearing the appeal takes steps to set aside the original decision. Decisions of the Environmental Appeal Board are considered final except for any possible legal challenges. Although there is no formal appeal beyond the Appeal Board, the Cabinet may on its own initiative alter a decision of the Environmental Appeal Board.

G. Specific Exemptions

It is rare to find a new regulation which will stand the test of time and advancing technology to such an extent that it will always be applicable in all situations. The field of special waste management is continually changing with new types of facilities and innovative technologies emerging at a faster and faster rate. To deal with this rapid change, the Special Waste Regulation has provided a mechanism for allowing amendments in the requirements on a case by case basis. This mechanism is found in Part 9 of the Regulation under the title Specific Exemptions.

If a person feels that his case does not fit the normal situation described by the Regulation, he may make an application to the director requesting a change in the requirements. The applicant must substantiate the requested change with reports, test data or similar information which indicates how the Regulation is not applicable. In order to be successful the applicant must demonstrate to the satisfaction of the director either that the waste is not hazardous, that the facility where the waste is managed provides better protection than that offered by the Regulation or that there are natural site specific conditions which mitigate the hazards of the waste in that particular situation.

The process for obtaining a change in requirements is similar to the one used to obtain a permit.

The Regulation also allows a manager or the director to exempt any person from any of the requirements if the special waste is from a spill of dangerous goods. This provision would be used to facilitate a timely response to emergencies arising from spills of dangerous goods.

XX ENFORCEMENT AND PENALTIES

Special waste regulations are enforced by the Waste Management Program and the Conservation Officer Service. Complaints are investigated and spot checks are made of waste management facilities, industrial operations and vehicles. Waste Management Officers and Conservation Officers have the right to enter non-residential property at any reasonable time to investigate works and activities which could cause waste or pollution. In carrying out such inspections officers may examine and remove records, conduct investigations and take samples for analysis or make other measurements as necessary. The Waste Management Act also empowers officers to stop and request the opening for inspection of road or rail vehicles at any reasonable time. Warrants to enter property and vehicles may be obtained from a justice if necessary.

Police officers may also make such inspections and as a result a vehicle and its cargo may be seized or ordered to be dealt with in any manner considered necessary. Any costs incurred in the disposal or handling of an impounded vehicle or waste will be charged against the owner.

A list of offences and maximum penalties arising from the Act and the Special Waste Regulation is shown in Table 11, Offences and Penalties.

TABLE 11: OFFENCES AND PENALTIES

Section of the Act	Offence	Maximum Penalty
3(1.1 & 1.2)	Causing or allowing waste to enter the environment without authorization.	$50,000
3.1(1)	Failure to keep a special waste confined in accordance with the regulations.	$50,000
3.1(2)	Releasing special waste from confinement required in 3.1(1) of the Act.	$50,000
3.2	Constructing, establishing, altering, enlarging, extending, using or operating a special waste facility without authority.	$50,000
4(1)	Storing special waste without proper authorization.	$50,000
4(3)	Failure to apply for a special waste storage permit within 60 days of being ordered to do so.	$10,000
4(4)	Failure to dispose of a special waste as ordered by a manager	$50,000
5(1)	Failure of a shipper to comply with manifest requirements.	$10,000
5(2)	Failure of a carrier to comply with manifest requirements.	$10,000
5(3)(a)	Accepting delivery of a waste which is not accompanied by a completed manifest	$10,000
5(3)(b)	Failure of a receiver to complete and file a manifest.	$10,000
5(3)(c)	Accepting delivery of a special waste without having authorization to operate a storage or treatment facility.	$50,000
21.1	Failure to allow inspection of a vehicle	$ 5,000
21.2	Failure to allow an emergency inspection of a vehicle.	$ 5,000
34(4)	Giving false information on a manifest	$10,000
34(5)	Failure to comply with a permit or approval for discharge of a waste.	$50,000
34(6)	Failure to comply with a permit to store a special waste.	$50,000
SW Regs.	Failure to comply with any requirement of the Special Waste Regulation.	$50,000 and 6 months imprisonment

XXI CONTINGENCY PLANNING

The Waste Management Act empowers the Minister of Environment and Parks to require anyone who has control over a polluting substance to prepare a contingency plan and make other preparations to counteract the possibility of spills. The minister may require that person to undertake investigations of potential risks, prepare an approved contingency plan and construct works considered necessary to abate pollution from a spill. In some cases the minister may order the contingency plan be tested to judge its effectiveness.

Staff in the regional offices of the Waste Management Program review each contingency plan and provide assistance with development of completion schedules and information on regulatory requirements. Site inspections are normally made and improvements recommended where necessary. Anyone needing assistance in preparing a contingency plan should contact the nearest office of the Waste Management Program.

XXII SPILLS AND OTHER EMERGENCIES

A spill of any material which could substantially impair the usefulness of land water or air should be reported by the person who was in charge of the material before it was spilled. As of this printing regulations for the reporting of spills under the Section 10(5) of the Waste Management Act have not been issued but they may be expected in the future. The federal Transportation of Dangerous Goods Regulations also requires the reporting of "dangerous occurrences". These regulations should be consulted for the types and amounts of material which must be reported.

- At present, all spills to the land or inland waters should be reported to the Provincial Emergency Program of the Ministry of the Attorney-General by telephoning 387-5956 or by dialing "0" for operator and asking for "Zenith 2667".

- Spills to marine waters (ie. saltwater) should be reported to the Canadian Coast Guard in Vancouver at 666-6011.

- "Dangerous occurrences" requiring immediate reporting under the TDG Regulations must be reported to local police or the Provincial Emergency Program at 387-5956 or Zenith 2667.

- Cases involving motor vehicle accidents should also be reported to local police and if necessary to local fire departments.

Containment and cleanup action should begin as soon as possible to protect human health and the environment. If the party causing the spill or local response agencies are unable to respond adequately to a spill the Minister of Environment may step in to take control of the situation. If necessary, he may declare an environmental emergency under the Environment Management Act and order the provision of services, labour, equipment or access to land in order to prevent or control a spill.

APPENDIX A: WASTE MANAGEMENT AND EMERGENCY CONTACTS

WASTE MANAGEMENT PROGRAM

The Ministry of Environment and Parks offices listed below should be contacted for permit and licence application forms, Manifest forms and advice regarding this Guide and British Columbia's laws and regulations for special wastes:

HEADQUARTERS

810 Blanshard Street
Victoria, B.C.
V8V 1X5
Telephone: 387-9955

VANCOUVER ISLAND REGION

2569 Kenworth Road
Nanaimo, B.C.
V9T 4P7
Telephone: 758-3951

LOWER MAINLAND REGION

15326 - 103A Avenue
Surrey, B.C.
V3R 7A2
Telephone: 584-8822

KOOTENAY REGION

310 Ward Street
Nelson, B.C.
V1L 5S4
Telephone: 354-6355

Sub-office

1617 Baker Street
Cranbrook, B.C.
V1C 1B4
Telephone: 426-1475

SOUTHERN INTERIOR REGION

1259 Dalhousie Drive
Kamloops, B.C.
V2C 5Z5
Telephone 374-9717

Sub-offices

540 Borland Street
Williams Lake, B.C.
V2G 1R8
Telephone: 398-4532

3547 Skaha Lake Road
Penticton, B.C.
V2X 7K2
Telephone: 493-8261

NORTHERN REGION

1011 - 4th Avenue
Prince George, B.C.
V2L 3H9
Telephone: 565-6443

Sub-offices

3726 Alfred Street
Bag 5000
Smithers, B.C.
V0J 2N0
Telephone: 847-7253

APPENDIX A : WASTE MANAGEMENT AND EMERGENCY CONTACTS

PROVINCIAL EMERGENCY PROGRAM

Call the Provincial Emergency Program to report spills of dangerous goods or special wastes.

HEADQUARTERS

Provincial Emergency Program
3287 Oak Street
Victoria, British Columbia
V8X 1P8

Telephone: 387-5956 (24 hours) or
Dial "O" for Operator and ask for
"Zenith 2667"

MINISTRY OF TRANSPORTATION AND HIGHWAYS

Call the Motor Vehicle Department for dangerous goods information.

Dangerous Goods Information
Administration and Safety Branch
2631 Douglas Street
Victoria, British Columbia,
V8T 5A3

Telephone: 387-5585

WORKERS' COMPENSATION BOARD OF BRITISH COLUMBIA

Call the Workers' Compensation Board to obtain information about occupational hazards.

6951 Westminster Highway
Richmond, British Columbia
V7C 1C6

Telephone: 276-3100
After Hours: 273-7711
or contact local WCB offices throughout the Province

TRANSPORT CANADA

To obtain information on the Federal Transport of Dangerous Goods Act and Regulations contact the Transport Canada office.

Transport Canada
Tower B
Place de Ville
Ottawa, Ontario
K1A 0N5

Telephone: (613)992-4624 (information)
(613)996-6666 (Canutec for emergencies)

Canadian Coast Guard
100 South Park Royal
West Vancouver, British Columbia
V7T 1A2

666-6011 (24 hour marine spills)

ENVIRONMENT CANADA

Call Conservation and Protection to obtain information on Federal environmental programs.

Conservation and Protection
Kapilano 100, Park Royal
West Vancouver, British Columbia
V7T 1A2

Telephone: 666-6711

APPENDIX B INFORMATION SOURCES

Apart from agencies, there are a variety of general sources of information available concerning the management of special wastes. Included are legislation, publications such as fact sheets, brochures, reports and books, and audio/visual aids. The following lists provide a general introduction to the topic of special waste management.

A. Legislation

1. British Columbia Waste Management Act, SBC 1982 Chapter 41 including Waste Management Amendment Act, 1987.

2. British Columbia Waste Management Act Waste Management Regulation.

3. British Columbia Waste Management Act Special Waste Regulation, established by Order in Council, effective April 1, 1988.

4. British Columbia Environment Management Act, SBC 1981 Chapter 14.

5. British Columbia Environment Management Act Environmental Appeal Board Procedure Regulation, Filed January 11, 1982.

6. Transportation of Dangerous Goods Act, July 17, 1980,.Chapter 36, Statutes of Canada as amended from time to time.

B. British Columbia Ministry of Environment and Parks Publications and Audio Visual Material

1. British Columbia Ministry of Environment - British Columbia Hazardous Waste Advisory Committee: Hazardous Waste Management in British Columbia, June 1981.

2. B.C. Ministry of Environment and Parks Special Waste Fact Sheets:

   1 Special Wastes The 99.9999 Per Cent Solution
   2 Special Wastes - Our Everyday Culprits
   3 The Special Waste Alternatives
   4 Special Wastes - A History
   5 The Home Front
   6 Special Wastes - Sharing the Challenge
   7 Technology and Special Waste Management

3. Special Wastes. Treatment and Storage Facilities (fact sheet).

4. Special Wastes. Resolving the PCB Problem, December 1983 (fact sheet).

5. B.C. Ministry of Environment, Hoebel M: Special Wastes in British Columbia. An environmental education package for secondary school students, April 1984.

6. Reid, Crowther and Partners Ltd., Hazardous Wastes in Northern and Western Canada. The Need for a Waste Management Strategy (3 Vols.), 1980.

7. Special Waste Advisory Committee, Interim Report, December, 1987.

8. Special Waste Advisory Committee, Development of a Special Waste Management Program in British Columbia, May, 1988.

C. Selected Reference Books

1. Environment Canada: User's Guide to Hazardous Waste Classification (Transportation of Dangerous Goods Regulations), 1st Edition, April, 1987.

2. Environment Canada: User's Guide for the Hazardous Waste Manifest (Transportation of Dangerous Goods Act).

3. Transport Canada: Emergency Response Guide for Dangerous Goods (second edition), Copp Clark Pitman, Toronto, 1982.

4. Fingas, Mervin F., et al: The Basics of Oil Spill Cleanup, Environment Canada, Ottawa, 1979.

5. Mackison, Frank W., et al: NIOSH/OSHA Pocket Guide to Chemical Hazards, U.S. Department of Health and Human Services, U.S. Department of Labor, 1978.

6. deGonzague, J. and S. Lawrie (eds.): Handbook on PCB's in Electrical Equipment, Environment Canada, Ottawa, 1981.

7. Sax, N. Irving: Dangerous Properties of Industrial Materials (5th edition), Van Nostrand Reinhold Co., New York, 1975.

8. Weiss, G.: Hazardous Chemicals Data Book, Noyes Data Corporation, Park Ridge, New Jersey, 1980.

9. National Fire Protection Association: Fire Protection Guide on Hazardous Materials (7th ed.), Quincy, Massachusetts, 1978.

10. Windholz, M., S. Budavari, L.Y. Stroumtsos, and M.N. Fertig (eds.): The Merck Index (9th edition), Merck & Co., Inc., Rahway, New Jersey, 1976.

11. Environment Canada: Manual for Spills of Hazardous Materials, Supply and Services Canada, Cat. No. Env 40-320/1984E, March 1984.

12. Clayton and Clayton (eds): Patty's Industrial Hygiene and Toxicology, Vol. 1-5, (Third Revised Ed.) John Wiley & sons.

13. Gosselin, R.E., Smith, R.P., and Hodge, H.C.: Clinical Toxicology of Commercial Products, (Fifth edition) Williams & Wilkins.

APPENDIX C APPLICATION AND PERMITS FORMS

- Generator Registration Form
- Manifest (Face side)
- Carrier's Register
- Prenotification
- Application for a License to Transport Special Waste Under Provisions of the Waste Management Act.
- License to Transport Special Waste.
- Application for a Permit Under the Provisions of the Waste Management Act (Special Wastes).
- Ministry of Environment and Parks. Waste Management Branch. Appendix_to Permit No._____(Special Waste).
- Application for a Change in Requirements

SCHEDULE 5
Form 1 (S. 43 and 44)

Generator Registration

Instructions: PLEASE PRINT (1) Complete a separate form if the generation site or the management site is different for each waste. (2) Retain Copy 3. (3) Send Copies 1 and 2 to: Director, Waste Management Branch, 810 Blanshard Street, Victoria, B.C., V8V 1X5.

1. This report is:

(a) ☐ an initial generator registration report made under section 43(1) or (2) of the Special Waste Regulation or

(b) ☐ a supplementary report made under section 43(3) of the Special Waste Regulation and the Consignor Identification number (if any) is: BCG- ☐☐☐☐☐

2. Generation Identification:

(Note: If the generator is a company operating in British Columbia the **registered** company name and address must be provided.)

Name of Generator ☐

Address ☐

City ☐ Province ☐ Postal Code ☐☐☐-☐☐☐

3. Special Waste Description

Physical State l = liquid s = solid g = gas x = sludge	Waste Name	PIN	TDG Class	Quantity		Units L or kg	Handling Code*	Waste Type Code**
				Now in storage	Produced/ 30-day period			
a)								
b)								
c)								
d)								
e)								

*Handling codes

01 storage
02 thermal treatment
03 chemical treatment
04 physical treatment
05 biological treatment
06 landfill
07 recycled
08 other, please specify ☐
09 landfarming

**Waste Type Codes - A = generated one time only; B = generated intermittently; C = generated continuously

4. Special Waste Management Practice:

Source or type of process generating the Special Waste(s)

☐

Address of S.W. Generation Site

☐ ☐☐☐-☐☐☐

Address City Province Postal Code

Location coordinates of S.W. Generation Site Lat.: deg. min. sec. Long.: deg. min. sec.

Address of S.W. Management Site

☐ ☐☐☐-☐☐☐

Address City Province Postal Code

5. Contact Person:

Name: ☐ Telephone No.: ( ) ☐☐☐-☐☐☐☐

PLEASE PRINT

Date: ☐☐☐ M D Y Signature: ☐

6. Certification:

I, _____ (Print Name), of _____ (Address)

_____ (City) (Province), certify that the information provided on this form by the special waste generator is correct.

(Signature) _____

For office use only:

Region: LM ☐ VI ☐ TN ☐ CA ☐ OP ☐ OK ☐ SK ☐ KO ☐

Standard Industrial Classification Code: ☐☐☐ (1) ☐☐☐ (2) ☐☐☐ (3)

INSTRUCTIONS ON REVERSE | **PRINT CLEARLY OR TYPE** | **PRESS HARD**

Instructions au verso | **Dactylographier ou écrire en lettres moulées** | **Appuyer fortement**

MANIFEST-MANIFESTE

THIS MANIFEST CONFORMS TO ALL FEDERAL AND PROVINCIAL TRANSPORT AND ENVIRONMENTAL LEGISLATION REQUIRING MANIFESTING.

CE MANIFESTE EST CONFORME AUX LEGISLATIONS FEDERALE ET PROVINCIALE SUR L'ENVIRONNEMENT ET LE TRANSPORT, REQUÉRANT UN MANIFESTE.

Manifest Reference No
N° de référence du manifeste

A CONSIGNOR (GENERATOR) EXPEDITEUR (PRODUCTEUR) — Provincial ID No - N° d'id. provincial

Company Name - Nom de l'entreprise

Mailing Address-Adresse postale — City - Ville — Prov — Postal Code - Code postal

Shipping site Address - Origine de l'expédition

City - Ville — Prov — Postal Code - Code postal

Intended Consignee - Destinataire prévu — Provincial ID No - N° d'id. provincial

Address - Adresse — City - Ville — Prov — Postal Code - Code postal

Receiving Site Address - Destination de l'expédition

City - Ville — Prov — Postal Code - Code postal

B CARRIER TRANSPORTEUR — Provincial ID No - N° d'id. provincial

Company Name - Nom de l'entreprise

Address - Adresse

City - Ville — Prov — Postal Code - Code postal

	Registration No - N° d'immatriculation	Prov
Vehicle - Véhicule		
Trailer/Rail Car No 1 - 1er remorque - wagon		
Trailer/Rail Car No 2 - 2e remorque - wagon		

Point of Entry / Point d'entrée — Point of Exit / Point de sortie

Carrier Certification I declare that I have received wastes as offered by the consignor in Part A for delivery to the intended consignee and that the information contained in Part B is complete and correct. Déclaration du transporteur J'atteste avoir reçu les déchets offerts par l'expéditeur dans la partie A en vue de leur livraison au destinataire choisi et que les renseignements inscrits à la partie B sont exacts et complets.

Yr - An — Mon - Mois — Day - Jour — Name of authorized person (print) / Nom de l'agent autorisé (caractères d'imprimerie)

Signature — Tel No (Area Code) - N° de tél (ind. rég.)

Reference No's of Other Manifest(s) used
N°s de références des autres manifestes utilisés

C CONSIGNEE (RECEIVER) DESTINATAIRE (RÉCEPTIONNAIRE) — Provincial ID No - N° d'id. provincial

Consignee information same as in Part A
L'information à fournir par le destinataire est la même qu'en A ☐

IF NOT, COMPLETE SHADED AREA – SINON, REMPLIR L'ESPACE OMBRAGÉ

Company Name - Nom de l'entreprise

Address - Adresse

City - Ville — Prov. — Postal Code - Code postal

Receiving Site Address - Destination de l'expédition

City - Ville — Prov. — Postal Code - Code postal

Date Received - Date de réception Yr - An Mon - mois Day - Jour — Time - Heure ☐ A.M. ☐ P.M.

Physical State / État physique	Shipping Name of Waste / Appellation réglementaire du déchet	Waste Identification / Identification du déchet: N° Provincial No (Québec - Ontario only) (Québec - Ontario seul)	TDGA/PIN LTMD/NIP	Quantity Shipped / Quantité expédiée	Units L or/ou kg Unités	Classification	Packing Group / Groupe d'emballage	Packaging Contenants: No - N°**	Codes int - ext	Quantity Received / Quantité reçu	Units L or/ou kg Unités	Identify Any Shipment Discrepancy Problems. Attach Addendum if Necessary / Indiquer toute différence relative à l'expédition. Annexer une feuille au besoin	Handling Code / Code de manutention	Decontamination / Décontamination: Packaging Contenants Yes Oui	Packaging Contenants No Non	Vehicle Véhicule Yes Oui	Vehicle Véhicule No Non

Special Handling/Emergency Instructions / Manutention spéciale/Instructions d'urgence — Attached / Ci-jointes ☐ — Below / Ci-dessous ☐

Circulation No. - Quebec only / N° de circulation - Réservée au Québec

If Handling Code "Other" (Specify) / Si code de manutention "divers", spécifier

If waste to be transferred specify intended company name / Si les déchets doivent être transférés, préciser le nom du destinataire — Provincial ID No - N° d'id. provincial

Date Shipped - Date d'expédition Yr - An Mon - Mois Day - Jour — Time - Heure ☐ A.M. ☐ P.M. — Scheduled Arrival Date/Date d'arrivée prévue Yr - An Mon - mois Day - Jour

Address - Adresse — City - Ville — Prov

Consignee Certification I declare that the information contained in Part A is correct and complete. Déclaration de l'expéditeur Je déclare que tous les renseignements à la partie A sont véridiques et complets.

Name of authorized Person (print) / Nom de l'agent autorisé (caractères d'imprimerie) — Signature — Tel No (Area Code) - N° de tél (ind. rég.)

Consignee Certification I declare that the information contained in Part C is correct and complete. Déclaration du destinataire Je déclare que tous les renseignements à la partie C sont véridiques et complets.

Name of authorized Person (print) - Nom de l'agent autorisé (caractères d'imprimerie)

Signature — Tel No (Area Code) - N° de tél (ind. rég.)

CARRIER'S REGISTER FOR BULK LOADS FROM MULTIPLE CONSIGNORS

Instructions: The Carrier shall: (a) complete the form;
(b) keep the form with the manifest;
(c) after the bulk load is completed append copy 1 of this form to copy 1 of the manifest, and
(d) attach copy 2 of this form to copy 4 of the manifest.

Collection Point Information: Waste Name: _____ Reference Manifest No.: _____

Name	Address	City	Postal Code	Telephone	Quantity Kg or L
1					
2					
3					
4					
5					
6					
7					
8					
9					
10					
11					
12					
13					
14					

Carrier's Name (Please Print) _____ Vehicle Licence Plate No. _____

Date: _____ (YY/MM/DD) Driver's Name _____ (Please Print) Driver's Signature _____

INSTRUCTIONS ON BACK + **Instructions au verso**

PRINT CLEARLY OR TYPE — **Dactylographier ou écrire en lettres moulées**

PRESS HARD + **Appuyer fortement**

PRENOTIFICATION
PRÉAVIS

CONSIGNOR(GENERATOR) EXPÉDITEUR

Provincial ID No. - N° d'id. provincial

Company Name - Nom de l'entreprise

Tel. No. (Area Code) N° de tél. (ind. rég.)

Address - Adresse, City - Ville Prov. Postal Code - Code postal

Shipping Site Address - Origine de l'expédition

City - Ville Prov. Postal Code - Code postal

CONSIGNEE(RECEIVER) - DESTINATAIRE

Provincial ID No. - N° d'id. provincial

Address - Adresse City - Ville Prov. Postal Code - Code postal

Receiving Site Address - Destination de l'expédition

City - Ville Prov. Postal Code - Code postal

Notification Reference No.
N° de référence

Shaded areas are for inter-provincial waste PCB shipments only.
Espaces ombragés sont réservés aux envois inter-provinciaux de déchets de BPC seulement.

CARRIER TRANSPORTEUR

Provincial ID No. - N° d'id. provincial

Company Name - Nom de l'entreprise

Tel. No. (Area Code) - N° de tél. (ind. rég.)

Address - Adresse

City - Ville Prov. Postal Code - Code postal

Date of Departure - Date d'envoi (Yr - An, Mon - Mois, Day - Jour)	Estimated Date of Arrival - Date d'arrivée (Yr - An, Mon - Mois, Day - Jour)	Province(s) or Country(ies) of Transit / Province(s) ou pays traversé(s)(es)(s)	Point of Entry or exit / Port d'entrée ou de sortie	Highway Used / Route utilisée PCB only - BPC seul

Shipping Name / Appellation réglementaire	Waste Identification No. / N° d'identification du déchet: Provincial Québec - Ontario only - seulement	TDGA LTMD	Quantity Shipped / Quantité expédiée	Units L or/ ou kg Unités	Classification	Packing Group / Groupe d'emballage	PCB - only BPC - seul: Concentration	Units (specify) Unités (préciser)	Packaging Contenants: No./N°s de contenants	Codes int./ ext.

Special Handling/Emergency Instructions
Manutention spéciale/Instructions d'urgence

Attached / Annexées ☐ Below / Ci-dessous ☐

Consignor Certification: I declare that arrangements have been made to receive and dispose of the consignment of waste.
Déclaration de l'expéditeur: J'atteste que des dispositions ont été prises pour la réception et le traitement des envois.

Name of authorized Person (print) - Nom de l'agent autorisé (caractères d'imprimerie)

Signature

Date: Yr. An. Mon. Mois Day Jour

Copy 1 (white) - Transport Canada for Inter-Provincial Consignment (PCB)
Transport Canada for International and Transborder Consignment(s)

Copie 1 (blanche) - Transports Canada, envoi inter-provincial (BPC)
Transports Canada, envoi(s) international(aux) et transfrontalier(s)

Province of British Columbia | Ministry of Environment | WASTE MANAGEMENT BRANCH

Waste Management File No. _____

APPLICATION FOR A LICENCE TO TRANSPORT SPECIAL WASTE UNDER PROVISIONS OF THE WASTE MANAGEMENT ACT

1. I/We, _____
(Full name, if a company, British Columbia registered name)

of _____
(Address, if a company, British Columbia registered address)

hereby apply for a licence to transport special waste within the Province of British Columbia.

2. This undertaking consists of _____

_____
(Give number and type of vehicles including trailers)

_____

dispatched from an operation located at _____

_____
(Business address including postal code)

_____

3. Those vehicles used to transport special waste are described as follows:

Vehicle Description	Licence Plate No	Net Carrying Capacity	Load Type (i.e. bulk, barrels, roll off, tank, etc.)	Liability Insurance Coverage $
(a)				
(b)				
(c)				
(d)				
(e)				
(f)				
(g)				
(h)				

(Continue on reverse side if necessary.)

4. Liability insurance provided by _____
(Name of insurance company)
is carried by the applicant on each vehicle.

Date of Application _____

_____ (Print Name of Applicant)

_____ (Signature of Applicant)

ENV 2106

MINISTRY OF ENVIRONMENT

WASTE MANAGEMENT BRANCH

LICENCE TO TRANSPORT SPECIAL WASTE

Under the Provisions of the Waste Management Act

_____

_____

is hereby authorized to transport special waste within the Province of British Columbia.

The authorized vehicles, their respective maximum loads and the minimum amount of liability insurance to be maintained on each vehicle are described as follows:

Vehicle Description	Vehicle Licence Plate No.	Maximum Vehicle Load (kg)	Load Type	Liability Insurance Coverage $

_____

Date issued _____, 19___

Special Waste Transport Licence No. _____

ENV 2105

Province of British Columbia | Ministry of Environment | WASTE MANAGEMENT BRANCH

Waste Management File No. _____

APPLICATION FOR A PERMIT UNDER THE PROVISIONS OF THE WASTE MANAGEMENT ACT
(Special Wastes)

THIS APPLICATION is to be filed with the Regional Waste Manager at _____

_____ (Regional Office address), British Columbia, _____ (Postal Code)

"any person who may be adversely affected by the discharge or storage of the waste may within 30 days from the last date of posting under section 3(a) or publication, service or display under section 4, write to the manager stating how he is affected."

PREAMBLE — The purpose of this application is _____

_____

1. I/We, _____ (Full name, if a company, British Columbia registered name)

   of _____ (Address, or if a company, British Columbia registered address)

   hereby apply for a permit to store special waste from _____

   _____ (General source of special waste)

   located at _____ (General location of source)

   and give notice of application to all persons affected.

2. The special waste storage site will be located at _____

   _____ (Give legal description)

   which is at _____ (Give address or describe location relative to some commonly known point)

   _____

3. The composition and quantity of special waste(s) to be stored is:

Substance(s) (as specified in the Special Waste Regulations)	Maximum concentration of substance in special waste (g/kg)	Maximum quantity of special waste to be stored (kg)

(Continue on reverse side if necessary)

4. The period during which the special waste will be stored will be _____

   _____ (Number of days, months, years, or permanent)

5. The method(s) to be used to store the special waste will be _____

   _____

   _____ (Give description of containers, buildings, or other facilities)

6. Dated this _____ day of _____, 19____.

   _____ (PRINT name of applicant or agent) _____ (Signature of applicant or agent)

   Telephone No. _____

A copy of this application was posted at the site in accordance with the Waste Management Regulations on _____.

ENV 2103

MINISTRY OF ENVIRONMENT

WASTE MANAGEMENT BRANCH

APPENDIX _____

to Permit No. _____
(Special Waste)

(a) The source of the special waste(s) to which this appendix is applicable is _____

_____

_____

(b) The quantity of special waste which may be stored is limited as follows:

Substance(s) (as specified in the Special Waste Regulations)	Maximum concentration of substance in special waste (g/kg)	Maximum quantity of special waste to be stored (kg)

(c) The works authorized are _____

_____

_____

approximately located as shown on the attached Appendix _____.

(d) The land on which the above special waste is stored and to which this appendix is appurtenant is _____

_____

(e) The works authorized must be complete and in operation _____

_____

Date issued _____, 19____.

Date amended _____, 19____. _____

_____, 19____.

_____, 19____.

ENV 2104

Schedule 5

Form 4 (s. 51)

Waste Management File No. _____
(For official use)

APPLICATION FOR A CHANGE IN REQUIREMENTS OF THE SPECIAL WASTE REGULATION

Notice: Any person who may be adversely affected by the change in requirements of the Special Waste Regulation may within 30 days from the last date of publishing write to the director stating how he is affected.

1. I/We, _____
(Full name if a company, British Columbia registered name)

   of _____
(Address, if a company, British Columbia registered address)

   hereby apply for a change in requirements of the Special Waste Regulation.

2. The special waste for which this application is made is from _____
_____
(Describe the process or operation which generated the special waste)

3. The characteristics of the special waste are as follows:
_____
(Describe special waste characteristics. Attach documents as necessary)
_____
_____

4. The amount or generation rate of special waste is _____
_____
(Give total volume or rate of waste generation over a specific time period)
_____

5. The special waste is: (give location or process for each as appropriate)
   - ☐ generated at _____
   - ☐ stored at _____
   - ☐ treated at _____
   - ☐ disposed at _____

6. The special waste is processed or treated by _____.

7. Application is made to change the requirements of section(s) _____ of the Special Waste Regulation because: (State reasons for change.)
_____
_____

8. In support of this application the following data is considered relevant: (List reports, references or data)
_____
_____
_____

9. On _____,19_____, a copy of this application was posted at or near the point where the special waste is produced or managed.

10. Dated this _____ day of _____,19_____.

_____ (Print name of applicant or agent) _____ (Signature of applicant or agent)

Telephone No. _____

APPENDIX D GLOSSARY

100 year floodplain - means land where the chance of a flood occurring in any given year is at least one in one hundred.

acid - a hydrogen-containing compound which reacts with water to produce hydrogen ions. A proton donor. A liquid compound with a pH less than 2 is regulated as a corrosive substance under the Transportation of Dangerous Goods Regulations.

alkali - see base.

approval - refers to an approval given under Section 9 of the Waste Management Act. This is an authorization similar to a waste management permit but is limited to a 12 month term.

aqueous - pertaining to, similar to, containing, or dissolved in water.

aquifer - includes any soil or rock formation that has sufficient porosity and water yielding ability to permit the extraction or injection of water at reasonably useful rates.

base - a substance containing the OH^- group which forms hydroxide ions in water solution. A proton acceptor. A liquid with a pH of greater than 12.5 is regulated as a corrosive substance under the Transportation of Dangerous Goods Regulations.

bioaccumulative - that property of a substance that causes it to accumulate in the tissues of an organism.

biochemical oxygen demand (BOD) - the amount of oxygen required by bacteria to stabilize decomposable organic matter under aerobic conditions.

biomagnification - the process that occurs when substances become concentrated as they pass to higher levels of the food chain.

buffer zone - land used to separate a facility from other land.

bulk load - a shipment in which 2 or more individual special waste consignments are carried together within a larger container.

carcinogenic - cancer causing.

carrier - a person who transports a special waste.

chemical treatment - the process by which hazardous waste is rendered non-hazardous or suitable for transport by changing the chemical composition of such waste.

closure - actions taken by the owner or operator of a hazardous waste facility to prepare the site for long-term care after it has stopped accepting waste.

combustion zone temperature - the temperature maintained inside the burning area of an incinerator.

confined aquifer - an aquifer bounded above and below by impermeable beds or by beds of distinctly lower permeability than that of the aquifer itself; an aquifer containing confined groundwater.

consignee - a person to whom special wastes are transported. A receiver of a special waste.

APPENDIX D GLOSSARY

consignor - a person who offers special wastes for transport. A shipper of a special waste.

contingency plan - a document setting forth an organized, planned and coordinated course of action to be followed in order to prevent pollution incidents, and limit potential pollution in case of fire, explosion or discharge of hazardous waste constituents which could threaten human health and the environment.

director - the Director of the Waste Management Program as designated by the Minister of Environment and Parks.

disposal - the introduction of waste into the environment through any discharge, deposit, emission or release to any land, water or air by means of facilities designed, constructed and operated so as to minimize the effect on the environment.

environment - the air, land, water and other external conditions or influences in which man, animals and plants live or develop.

facility - any works that are designed to or do handle, store, treat, destroy or dispose of special waste, and includes recycle facilities, short term storage facilities, treatment facilities, incinerators, thermal treatment facilities, mobile facilities, secure landfills, piles, surface impoundments, land treatment facilities and long term storage facilities.

final cover - the cover material that is applied upon closure of a landfill and the surface of which is permanently exposed at the surface.

free liquid - any quantity of a liquid which is separated from a solid when subjected to the Free Liquid Test Procedure described in Part 3 of Schedule 4 of the Special Waste Regulation.

friable asbestos - asbestos material that may have the following characteristics: fluffy or spongy appearance (always applied by spraying); irregular, soft surface (usually applied by spraying); or textured, dense, fairly firm surface (usually applied by trowelling). Friable asbestos can be crumbled, pulverized, or reduced to powder in the hand, readily releasing fibers with minimal mechanical disturbance.

generator - the person who by nature of ownership, management or control, is responsible for causing or allowing to be caused, the creation of hazardous waste.

halogenated - covalently bonded with one or more of the following elements: bromine, chlorine, fluorine, iodine.

heavy metal - any of the following elements: antimony, arsenic, beryllium, cadmium, chromium, copper, lead, manganese, mercury, nickel, selenium, silver, thallium, vanadium, or zinc.

impervious - having a permeability not greater than 1×10^{-7} cm per second when subjected to a head of 0.305 m of water

labpack - a drum with a maximum capacity of 454 litres filled with small containers of chemically compatible special wastes which are surrounded by a sufficient quantity of inert absorbent material to completely absorb all the liquid contents of the inside containers.

LC_{50} - the lethal concentration of a substance in air or water necessary to kill 50% of test organisms within a specified time under standardized conditions.

APPENDIX D GLOSSARY

LD_{50} - the lethal dosage of a substance necessary to kill 50% of a sample population of test animals as determined from exposure to the substance, by any route other than inhalation within a specified time under standardized conditions.

manage - to handle, transport, store, treat, destroy or dispose of special waste.

manager - a Regional Waste Program Manager as designated by the Minister of Environment and Parks.

manifest - a form specified by the Special Waste Regulation to document and track the movement of special waste shipments.

mutagenic - causing alterations in the genes of a cell

oil - see waste oil.

operator - the person responsible for the overall operation of a facility.

permeability - the property of soil or rock that allows passage of water through it.

pile - see waste pile.

prenotification - the process of advising government agencies in advance of a shipment of special waste. The shipment may be leaving, going to or passing through the notified jurisdiction.

principal organic hazardous constituents or POHC - one or more organic components of a special waste that are designated by a manager or the director.

product of incomplete combustion or PIC - a carbon containing compound, other than carbon dioxide, present in the exhaust stream of a thermal treatment facility.

pyrolysis - experimental hazardous waste thermal treatment process by which organic wastes are decomposed in any oxygen deficient atmosphere at high temperatures.

recharge area - any land within which water enters an aquifer.

retention time - the time hazardous waste is subjected to the combustion zone temperature in an incinerator.

seasonably high water table - the highest level of rise of the free surface of water below the ground surface at any time during the year.

SIC number - a number assigned to a corresponding type of industry, manufacture or product under the Standard Industrial Classification prepared by Statistics Canada.

solidification - the process of stabilizing waste within a solid with high structural integrity.

special waste - any waste that is determined to be a special waste under Section 1 of the Special Waste Regulation.

statistically significant - when the difference between a background and an observed value within an area of concern is so large that it is deemed improbable that it could be attributed to chance.

APPENDIX D GLOSSARY

TDGA - Transportation of Dangerous Goods Act (Canada).

teratogenic - causing birth defects or alterations in the formation of cells, tissues or organs of a fetus.

thermal treatment - means the treatment of special waste in a device which uses elevated temperatures.

treatment - the handling or processing of special waste in such a manner as to change the physical, chemical or biological character or composition of the special waste in order to eliminate or reduce the volume, or one or more hazardous properties of the special waste.

unconfined aquifer - an aquifer that extends downward from the surface with no low permeability material above it.

underground injection - the emplacement of fluids underground through a bored, drilled, driven or dug well.

waste - includes air contaminants, litter, effluent, refuse, special wastes and any other substances designated by the Lieutenant Governor-in-Council whether or not it has any commercial value or is capable of being used for a useful purpose.

waste oil - automotive lubricating oil, cutting oil, fuel oil, gear oil, hydraulic oil or any other refined petroleum based oil or synthetic oil where the oils through use, storage or handling have become unsuitable for their original purpose due to the presence of impurities or loss or original properties.

waste pile - any non-containerized accumulation of solid, nonflowing special waste that is being stored or treated.

wetland - any land such as a tidal flat, marsh, swamp, bog or fen which is frequently inundated and for that reason has developed an organic soil and occurs in an area which is lower lying than its surroundings.

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REQUEST FOR REVISIONS CARD

British Columbia's special waste laws and regulations are subject to periodic review. Revisions will be published from time to time. If you wish to receive revisions, complete and return this form to:

Special Waste Legislation Revision
Environmental Safety Program
Waste Management Branch
Ministry of Environment and Parks
810 Blanshard Street
Victoria, British Columbia
V8V 1X5

I request revisions to the following (please check):

☐ Special Waste Legislation Guide

☐ Special Waste Regulation

☐ Waste Management Act

Generator I.D. No. BCG ☐☐☐☐☐
(if applicable)

Name _____

Title or
Department _____

Organization/Street Address _____

City _____ Province _____

Postal Code
☐☐☐☐☐☐

DANGEROUS GOODS

LABELS

THE MARKS OF SAFETY

CLASS **1** EXPLOSIVES

CLASS **2** COMPRESSED GASES

CLASS **3** FLAMMABLE LIQUIDS

CLASS **4** FLAMMABLE SOLIDS, SPONTANEOUSLY COMBUSTIBLE, DANGEROUS WHEN WET

CLASS **5** OXIDIZERS & ORGANIC PEROXIDES

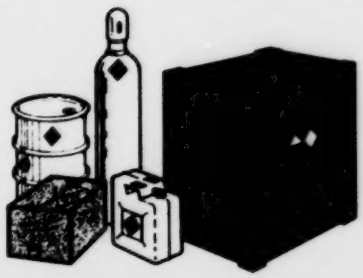
CLASS **6** POISONOUS & INFECTIOUS SUBSTANCES

CLASS **7** RADIOACTIVES

CLASS **8** CORROSIVES

CLASS **9** MISCELLANEOUS DANGEROUS GOODS

SPECIAL LABELS



EMPTY
VIDE

SEPTEMBER 1986

TP 5947

Canada

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DANGEROUS GOODS

PLACARDS

THE MARKS OF SAFETY

CLASS **1** EXPLOSIVES

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CLASS **8** CORROSIVES

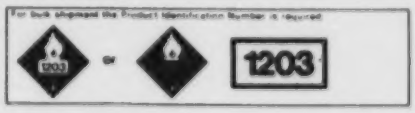
CLASS **9** MISCELLANEOUS DANGEROUS GOODS

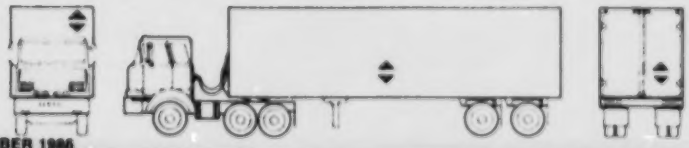
SPECIAL PLACARDS

MIXED LOAD

BULK SHIPMENT

For bulk shipment the Product Identification Number is required





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